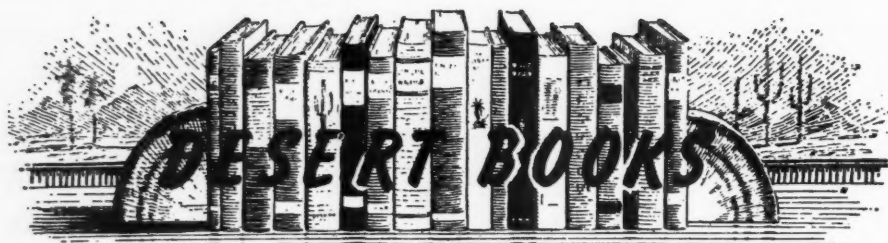


THE *Desert* MAGAZINE

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GUIDE TELLS HOW TO KNOW AND COLLECT ROCKS

If you are a rockhound with no academic knowledge of rocks, or a gem cutter with little acquired information on gems, you should possess *MINERALS, Their Identification, Uses and How to Collect Them*, by Herbert Zim and Elizabeth Cooper. Many of the books on gems and other minerals are too difficult for the average reader; they must be studied instead of read for enjoyment. But *MINERALS* is different. It is profusely illustrated with crude but impressionistic drawings. It gives the most important mineral localities in every state and lists the names of most of the mineral societies everywhere. It tells the uses of minerals and how some of them are processed into metals. The book coordinates geology, gemology, mineralogy and metallurgy into an easy primary education. It tells how to become a collector, how to house a collection and how to identify specimens.

The book is a "must" for beginners and all amateurs who do not have the advantage of a mineral society membership. If a friend newly acquiring an interest in gems and minerals were to request the loan of one of my many books on the subject, *MINERALS* is the one that I would thrust upon him with a reasonable assurance that he would read it through and understand what he had read. It is also a worthy addition to a good mineral library because of the mineral locations and society addresses it gives and for much useful information not given in other books on gems and minerals. Here is a fine item to lay away for Christmas for what rockhound friend or member of the family.

Harcourt, Brace & Co., New York. 368 pages, 80 illustrations. \$3.00.

—LELANDE QUICK

DEBT TO MARY AUSTIN TOLD IN MEMORIAL BOOK

To acknowledge formally the debt which the Southwest always will owe Mary Hunter Austin, a representative group of her friends and associates have put into words their estimate of the many-faceted woman of genius who upon her death eleven years ago left a rich heritage to the land of her adoption. The memorial is in form of a symposium edited by Willard Hougland and published last year by Laboratory of Anthropology at Santa Fe, New Mexico.

Hougland prefaces the 15 testimonials

with, "The good Mary Austin accomplished in the matter of the arts and crafts of these two cultures (Spanish-American and Indian), shows itself with greater clarity as each year passes. And still she had time to write two of what I believe to be her greatest books: *One Smoke Stories* and *Land of Journey's Ending*, in addition to her outstanding autobiography, *Earth Horizon*."

Among those who have contributed to the 63-page booklet are Houghton Mifflin company, her publishers for nearly a third of a century; such literary critics as Henry Seidel Canby, Carl Van Doren, Dudley Wynn and T. M. Pearce; personal acquaintances like Jane Baumann, Mabel Dodge Luhan, Erna Fergusson, Elizabeth Willis DeHuff, Ina Sizer Cassidy and Edgar L. Hewett.

Besides the various personal, literary and sociological estimates of Mary Austin, there is an account of her contributions to the Indian Arts Fund of Santa Fe, followed by a checklist of her books.

MINING BUREAU REPRINTS FIELD TESTS OF COMMON METALS

Used by miners throughout the world since its first publication in 1917, University of Arizona's bulletin on common field tests for minerals now has been issued in the second reprint of its eighth edition. It has been reprinted in the past by Queensland Government Mining Journal of Brisbane, Australia, the engineer's reference handbook *Fax* and in part by other publications. It also is used as a text in some high schools throughout the country, and in vocational education.

Written in simple and nontechnical language, the bulletin is intended for the prospector and miner in the field and describes tests for 32 minerals and other substances. It first was published under the title *Select Blowpipe and Acid Tests for Minerals*. Now entitled *FIELD TESTS FOR THE COMMON METALS*, it has been written in all of its editions by George R. Fansett, mining engineer of Arizona Bureau of Mines. Fansett has worked in mining for 40 years, 30 of them as field mining engineer among Arizona prospectors and miners for the state bureau.

Many of the field tests described by Fansett can be made with the usual equipment and acids and dry reagents such as borax and baking soda which the prospector stows in his field pack.

Press Bureau, University of Arizona,

Tucson. Free to Arizona residents, 20 cents each to out-of-state purchasers.

BOOK BRIEFS . . .

E. A. Burbank, who lived among the Indians many years, from Oklahoma to Navajo, Hopi and Zuni land of the Southwest, with the California tribes and the Sioux, Crows, Nez Percés and Utes, came to understand them as few artists have. Of him Charles F. Lummis said he was "easily master of Indian faces." His story is told by Dr. Ernest Royce in *Burbank Among the Indians*, published by Caxton Printers.

Life of thirteenth century inhabitants of Mesa Verde cliff ruins, Colorado, has been dramatized by Christopher La Farge in a "play in verse" published by New Directions. It was written for the Metropolitan Opera company as libretto for an opera.

Stories of cowboy songs and how they are sung, tales of the old cattle trails and the roundups, and anecdotes as told by the late Jack Thorp to Neil McCullough Clark, fill *Pardner of the Wind* with the flavor of the Southwest. Thorp is described by one who knew him, as "one of the rare cowboys who had a Long Island background and lots of academic education. A man who left what he apparently considered the 'effete east' to find fun and fortune first in Old and then in New Mexico." Book is beautifully printed and bound by Caxton Printers.

Frances Crane, whose *Turquoise Shop* was reviewed on this page March 1942, has written another novel with New Mexico setting—*Amethyst Spectacles*. It deals with the charm of the Taos colony, the beauty of the surrounding mountains.

Oliver LaFarge, most popularly known for his *The Enemy Gods* and the Pulitzer Prize winning *Laughing Boy*, has just written his autobiography *Raw Material*, which as those who know his work might have suspected deals more with the author's psychology than with events of his life. He was an anthropology student at Harvard, pursued his field work in Arizona, New Mexico and Guatemala, has written widely—from scientific papers to short stories, has been official and unofficial representative of the Southwest Indians. His latest book was published by Houghton Mifflin.

Harvey Fergusson's *Home in the West*, published by Duell, Sloan and Pearce, is this New Mexico author's ninth book. It is autobiographical in vein, a search into the world which produced him, and ending with his twenty-first year. And since his forebears for generations were New Mexicans there is much of old Southwestern culture in his anecdotes and memoirs.

DESERT

Close-Ups

• Silhouetted on this month's cover are five members of the Norman Nevills expedition down the San Juan river to Lee's Ferry on the Colorado which Randall Henderson writes about this month. Left to right they are: Patricia Bailey, Alfred M. Bailey, Father Harold Baxter Liebler, Don Bondurant and Frank Cooke. Photo taken at the junction of Forbidden and Bridge canyons — on the "Rainbow Trail."

• City people have seen so many strange sights on the desert, they are becoming immune to them. But John Hilton can tell them a new one. Down in Coachella Valley they might happen on such a scene as this: A white haired woman with a broom, busily sweeping away at the base of a sand dune! The answer isn't what one might think, for she's the Desert Shell Lady—Mrs. Gertrude Favier, collecting tiny ancient shells which she uses to make delicate jewelry and dainty cor-sages. You'll meet her in DESERT at an early date.

• In the next issue Jerry Lauder milk will explain the fine art of eating cactus fruit (tunas). It was in Arizona that Jerry acquired his cactus lore, and he has developed some of it himself through experimentation. After reading his story, you'll know how to avoid all the things a tenderfoot usually blunders into. And after reading Jerry's recipes for preparing such dishes as *Miel de Tuna*, *Mel-cocha* and *Queso de Tuna*, you won't worry your ration board for sugar anymore. You'll start looking for someone who knows someone who has some prickly pear cactus—so you can make some "cactus honey" too.

• After conducting a tour of Bird Island in Great Salt Lake, Utah, in this issue, Charles Kelly next will take DESERT readers on an exploring trip through New Mexico and Arizona with the Captain Lorenzo Sitgreaves party down the Zuni and Little Colorado rivers. The year is 1851 and the scout is Antoine Leroux, one of that company of guides, Indian fighters and mountain men about whom legends have grown for almost a century. Far less is known of Leroux than of Kit Carson (for he never kept a journal), but Kelly has recorded most of what he has been able to discover from various sources.

CREED OF THE DESERT

By JUNE LEMERT PAXTON
Yucca Valley, California

The catsclaw ladies look charming today,
Each wearing her holiday gown;
I can't see the reason for dressing so gay,
Unless they are going to town.



Volume 8

SEPTEMBER, 1945

Number 11

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The Desert Magazine is published monthly by the Desert Publishing Company, 636 State Street, El Centro, California. Entered as second class matter October 11, 1937, at the post office at El Centro, California, under the Act of March 3, 1879. Title registered No. 358865 in U. S. Patent Office, and contents copyrighted 1945 by the Desert Publishing Company. Permission to reproduce contents must be secured from the editor in writing.

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BESS STACY, Business Manager. — EVONNE HENDERSON, Circulation Manager.

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SUBSCRIPTION RATES

One year \$2.50
Canadian subscriptions 25c extra, foreign 50c extra.

Subscriptions to Army personnel outside U.S.A. must be mailed in conformity with P.O.D. Order No. 19687.

Address correspondence to Desert Magazine, 636 State St., El Centro, California.



"When the purple mist just kissed the plain." Photo by Wilton Carneal.

THE DESERT

By MARGARET GRAHME COLLINS
Carlsbad, California

There have been those who feared death at the last,
Feared the relentless cold and lonely tomb,
Shuddered to think how the unfriendly womb
Of earth would prison them and hold them fast.
I do not fear the narrow brown-walled room.
Let sage spring from my flesh and let me be
Food for mesquite and twisted Joshua tree;
Let my blood flower in scarlet cactus bloom.
Here in these serried hills my fathers lie.
Here are the pioneers—the brave, the bold.
Deep in the furrowed plains and on the high
Lone ridges rest the wagon trains of old.
In this rich earth, bury me with my clan:
Trapper, scout, frontiersman, cattleman.

FLOWERS OF THE DESERT

By VIOLET PEEL RUSSELL
Bakersfield, California

There are those who sing of roses,
Of violets and dew,
But I sing of the desert blooms
That flaunt their beauty too.

Of cacti, strong and sturdy,
Wax-white yucca bells,
Manzanita, desert holly
And Joshua sentinels.

RELEASE

By JAMES LANE DOYLE
Los Angeles, California

To those torn by war's havoc,
Sad hearts that find no peace—
To souls earthbound in slavery,
Whose sorrows never cease—
The desert's magic silence
Breathes freedom and release.

DESERT MORNING

By Stf. Sgt. MARCUS Z. LYTLE
Montrose, California

The lava mounds are black against the dawn,
And ocotillos stand as sharp as glass;
The yellow glory of the cottonwoods is stilled
In the first sunshine coming through the pass.

After a windy night, the desert air is hushed
And cold, its shadows deep and grim;
But clouds and sand of last night's storm are spent;
A calm new day is at the canyon rim.

AS RIDES THE DESERT WIND

By LOUISE IVIE
Pasadena, California

Lives that pulse with strange broodings—
Only they, can know
The heart of the purple desert
When the wind rides low.

And those who strain for loved voices—
Only they, hear a cry
From the lips of a thirsting desert
When the wind rides high.

PALO VERDE

By DORA SESSIONS LEE
Prescott, Arizona

When I reach that plane called Heaven
I shall beg a little room
That overlooks an Eden
Where the palo verdes bloom.

I shall not bemoan my passing
Earthly joys will leave me cold
If I find the streets of Heaven
Bright with palo verde gold.

WHITE HOLLY

By HELEN L. VOGEL
Mecca, California

Where now, oh where does white holly grow—
Where the snow birds nest and the cold winds
blow?

Oh, no. It blooms where the sand sweeps wild,
Where coyotes and quail are the desert's child,
Where hills rear high up to craggy peaks
And the trails are faint to the gold man seeks.
It nestles close to the shell strewn sand
Which once was the palm of the ocean's hand.
White leaves are blendings of flame of dawn
And the purpling night when day is gone,
A blush of green and each earthborn tone.

Its white is as life—part unseen, part known.

DESERT CHARACTER

By THELMA WHITTIER
Valmora, New Mexico

Dignity has the desert in its drab and tattered
gown
Peace has its face under a thorny crown
Quiet has its voice the whole year 'round
Laughter has its sunshine which heals without
sound.

Did You See the Desert?

By EVANGELINE TAPPAN
Bicknell, Utah

Did you see the desert after the rain
When a purple mist just kissed the plain;
And the mountains distant, mysterious, blue,
Seemed to court the desert too?

Did you see blue pools like jewels laid
In the rocky cups that the sandstone made,
And the fleet wild horses that came to drink
From the cup's cold water at the trampled brink?

Did you see the desert on the first spring day
When a little lizard darted away;
And green flies buzzed round the horses' ears,
Sheep herds waiting for the snip of shears,

The earth deeply dreaming in fathomless sleep,
The sky its infinite secrets keep,
The stars like diamonds on velvet blue;
And in all the vastness there was only you?

DESERT GHOSTS

By MURRAY SKINNER
Los Angeles, California

Across the sands the restless whirlwinds dance—
Tall yellow ghosts, like memories of the men
Who sought adventure, gambling on a chance,
And died, forgotten, save by some lone pen.
Whirling at freakish fancy of the wind,
Feet in spined cacti, heads among the clouds,
They stalk majestically, till whipped and thinned,
They fall apart, like disinterment shrouds.

No trumpeting of wind proclaims their birth,
Though trumpets blared the start of journey
made

By men whose ghosts they shaped from desert
earth . . .

But like the trappings such brave men displayed
The trail is marked by debris, crushed and rolled.
Though the men who ventured left their's traced
in gold.

AT PEACE

By DONALD G. INGALLS
Los Angeles, California

To stand at the foot of a weathered slope,
In the warmth of a desert day,
And watch the shimmering pulse of heat,
That o'er my Kingdoms play.

To trace the flight of a busy bird,
Or of a lazy, guardian, cloud.
To wonder at the huddled mesquite
That about the washes crowd.

Here I may meditate in peace,
Here is my soul at rest.
As I wander slowly onward,
Through the land I love the best.

FIERY FINGERS

By EDNA SMITH DeRAN
Los Angeles, California

Drouth now tarries overlong
And summer heat makes known its might.
The tapestry of spring time fades,
As nature feels the touch of blight.

Death hovers here upon the land
And verdure halts, irresolute.
The parching pastures yawn wide-mouthed,
The voice of lipping creeks grows mute.

We weary of the sky's blue arch,
And yet a poet's eager eye
Finds beauty in the staying drouth,
A poem poised in cloud-free sky.



This photograph of the Hopi Snake dance was made 35 years ago, before the Indians put a taboo on cameras. Photo by W. T. Mullarky.

"I Was a Snake Priest"

By DAMA LANGLEY

The Hopi Snake Dance conducted every other year at Walpi in Northern Arizona, is older than the coming of the white men to this continent. The mysteries connected with it, and its secrets have been so faithfully guarded throughout the centuries that only a select few of the highest members in the order know the entire ritual. It is seldom a member of the Snake Clan will discuss even the most trivial matters touching on the secret order. For that reason there is no picture of Nahe, as I have called him, and he is not known to his tribesmen by that name. In every other respect the story is true, and its facts have been checked with accredited authorities on snakes.

THIS IS like getting home after a long absence," I said to Marta and Nahe as we settled ourselves for a long gossip on the rooftop at Old Walpi. I could look down on the Sacred Rock in the plaza where for centuries the Snake Dance has been held, and still farther down to where the northern Arizona desert stretched away for a hundred miles to be met by the blue horizon.

Early peaches were ripening in the sunny coves surrounding the fortress-like mesa, and a basket, made by Marta, was piled high with the fragrant fruit. Marta was shelling corn to grind into meal for *piki* and Nahe worked with a little hand drill putting holes through shell disks to

be strung into a necklace. Although gas rationing would limit the crowd of visitors to the Snake Dance only three weeks off, wagonloads of guests from dude ranches, and many horseback parties were expected. Indians from every nearby tribe would be there to buy and trade for Hopi wares. Nahe was getting his stock of jewelry ready.

"Somebody told me you used to be a Snake dancer," I spoke idly to him.

"Yes. But I was afraid of the snakes; they knew it and bit me. That's why I stopped being a dancer!" He grinned cheerfully and I thought he was teasing me until he pointed to an old scar on his hand, and

pushing his sleeve back revealed two or three matching scars on his brown arm.

"Afraid of them? A Hopi afraid of snakes?" I said. For many years Nahe had saved a place for me close to the *kisa* where the snakes are stored during the actual dance, and he always seated himself nearby. I thought it was because we were friends, but my ego took a tumble when he said, "I sit close to you at the dances because you are not afraid of the snakes. You don't jump and yell when one gets close. You know the priests let snakes almost bite white visitors who get scared and disturb the ceremony."

This revelation that Nahe had been an active member of the mysterious Snake Dance order interested me greatly. Here was real information if I could get him to talk.

"I thought people were born into the Snake Clan and lived and died in it," I said inquiringly.

"People are born into the Snake Clan, but the Snake Dancer order is made up of chosen men from the Clan. My father was a Snake Priest and I was only six years old when he died. My grandfather at once took



Women of the Snake clan. Photo by Frashers.

me down into the Snake kiva and began to teach me the songs and prayers. I didn't want to go down there with him."

As he talked I could almost see the small frightened lad and hear his unheeded protests. The grandfather was relentless, and Nahe was learning the age-old chants when fate intervened in the form of the reservation agent. He gathered young Nahe up along with several other Hopi children and sent them to Sherman institute in California.

"I almost forgot my fear of snakes while I was there, and it never occurred to me that I'd have to take part when I went home again. There in California we seemed so far away from the old beliefs and ceremonies. I'm not saying the Snake Dance isn't a good thing for those who believe in it. I just am physically unfitted to be a Snake dancer because I fear and hate snakes. My grandfather refused to believe my feelings were real, and I was again marched to the Snake kiva to take up my training."

He stopped talking and we could faintly hear the sound of rattles and songs in the Snake kiva built like a swallow's nest against the sheer cliff by the Snake Rock. Down there at the foot of the ladder which protruded through the hatch in the roof,

young acolytes were being trained for their sacred tasks, and perhaps some of them were as frightened as had been Nahe forty years ago.

Nahe continued, "When it was time to bring in the snakes for the dance I was sent to the north with a very stern old priest. We had spent the night before in the kiva practicing the proper songs and prayers and I must have gone over them a thousand times. When a rattlesnake is found, 'medicine' is sprinkled and then one is supposed to say this prayer to the gods: 'Make him to be gentle. Make him so he bring no evil to me. Make him *tame!*' And then I was to say to the rattlesnake: 'Be tame unto me; for here I've made my prayers!'

"I said that over and over in the kiva that night while I worked making a sacrificial wand of eagle feathers and jay bird plumage. It was unfortunate that I was the only candidate, if such an unwilling victim as I could be called a 'candidate.' All the old men were watching me and listening to me, waiting to see if I shamed my grandfather, and there was I, hungry and sleepy and mad and scared. But when dawn came I went with them down the Old Warrior trail in search of rattlesnakes I didn't want to find. We went toward Wepo wash, and

as soon as the sun came up snakes began to show themselves. They were moving to get into cool shady places before the heat of the day. At first I was just supposed to watch how it was done when a snake was captured. I saw how the sacred meal and 'medicine' was tossed to the six cardinal directions and then on the snake. I listened to the prayers and observed how the snake was stroked with the eagle wing and then swiftly picked up with the thumb and forefinger, the thumb being extended forward and upward to keep the snake from turning its head. Of course the snake is to be held with the left hand and gently stroked and smoothed with the right hand before it is dropped into the rawhide bag carried for the purpose. I watched and listened and observed."

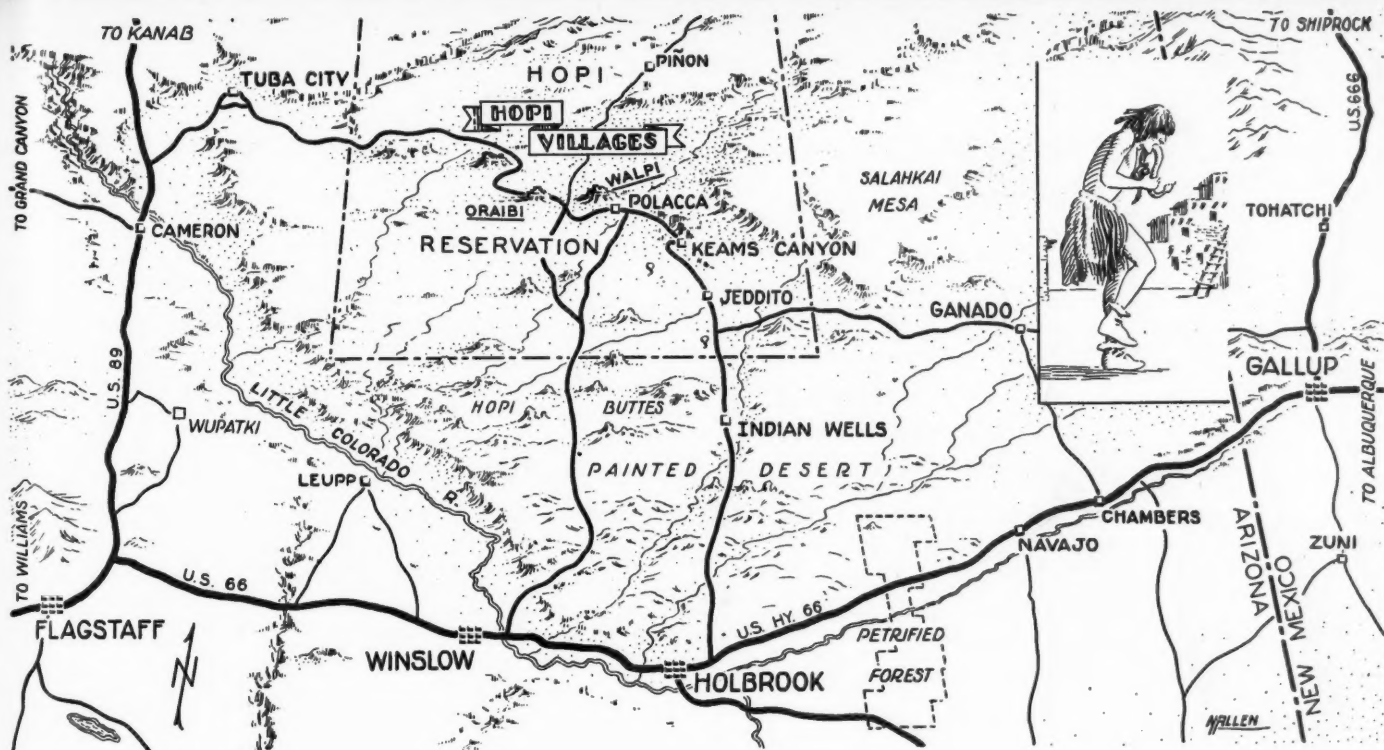
"Were you afraid of other snakes? Or were you just catching rattlers?"

"We didn't bother with anything but rattlesnakes. This priest I understudied had no patience with members of the order who danced with bull snakes or water snakes. Didn't the whole dance revolve around rattlesnakes that bit Hopis and had to be appeased?"

"You know one of our ancient chiefs went down into Grand Canyon and he married a daughter of the underground Water God. He brought her here to Walpi and when her children were born some of them were rattlesnakes. The Hopi people were not nice to her and the rattlesnakes bit them. Since her father controlled the rains and the water that feeds Hopi waterholes, it was necessary to keep in his good graces so the Snake Dance was initiated. The old priest felt that rattlesnakes were the ones to be honored, and only rattlers interested him. You know, of course, that rattlesnakes give birth to their young instead of laying eggs to be hatched in the sun."

"Did you catch any snakes that first day?"

"Yes. We, a big rattler and I, caught each other," he pointed to the scars on his hand. "I saw this big fellow before the priest did, but I walked right past it making plenty of noise hoping it would take the hint and go. 'Come back here,' said the old priest. I walked back and looked at the snake. He just lay there coiled, tasting the air with his forked tongue and listening to us. A snake hears through its tongue, you know. I was handed the pouch of sacred medicine and I sprinkled it around. I think I anointed several new directions in my desire to have the snake get away. And I couldn't think of one word of the prayer I was to make! He didn't move and after awhile I threw a handful in his face and began to really fan him with the eagle's wing. He fanned right back with angry strikes. I backed away and he struck so hard he was stretched full length and the priest yelled for me to grab him. The thumbs upward and forward technique was completely forgotten. I just grabbed, too



far back behind his head and he turned and bit me. The priest snatched him and dropped him in the sack and we went to the nearest waterhole."

I opened my mouth to ask the important question, but Nahe was too quick.

"Don't ask what cured the bite. That isn't my knowledge. You must not ask me to give you any of the secrets of the Snake order. I was, however unwilling, a member of it, and even other Hopis must not learn about its affairs from me."

"Could you tell me if the bites are treated with herbs? What can you tell me that won't get you into trouble with your people?"

"I can tell you that Indians never scare themselves to death when a snake bites them, like many white people do. Our Hopis know that getting scared and excited will carry snake poison through the system very quickly. Many of our people are bitten every year as they herd sheep, or gather their crops from the fields. The women and children are bitten while they get bunch grass and yucca leaves for basket making, or dig clay for pottery. Not one has been known to die from a snake bite. Why? Because centuries of brotherhood with rattlesnakes has made it necessary for the Hopis to learn all there is to know about such snakes, their habits, the deadliness of their venom and how to combat it."

I looked at the scars on Nahe's hand and arm. The flesh had not been cut across so the wound would bleed and drain.

"Last week one of our old men watching the plantings was bitten. The Snake priest was summoned and the old man was brought to the kiva. He wasn't allowed to walk and get his blood hot, he was brought up on the back of a burro. The priests kept him in the kiva until yesterday and he came out perfectly well, but very hungry. Only two little blue marks show where the

fangs buried themselves. It was a sidewinder that bit him."

"I guess it was lucky that it was only a sidewinder that got him," I said.

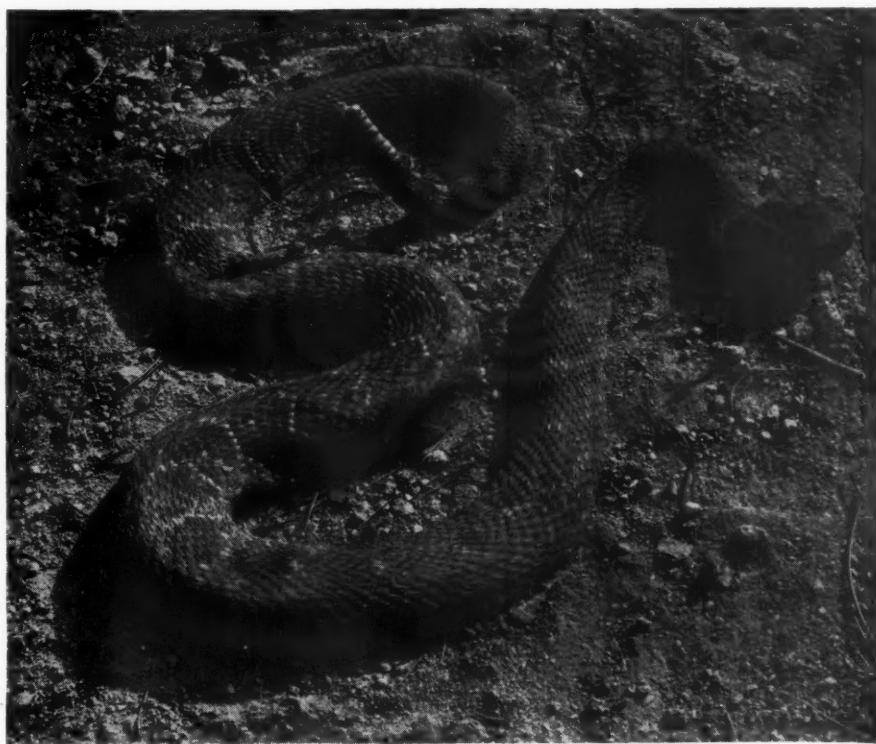
"Only a sidewinder!" Nahe was indignant. "What do you mean? A sidewinder is as deadly as a diamondback rattler." I murmured apologies for my ignorance and Nahe continued my snake education. "A fang came loose when the snake bit him and it was still stuck in the wound when he came to the kiva."

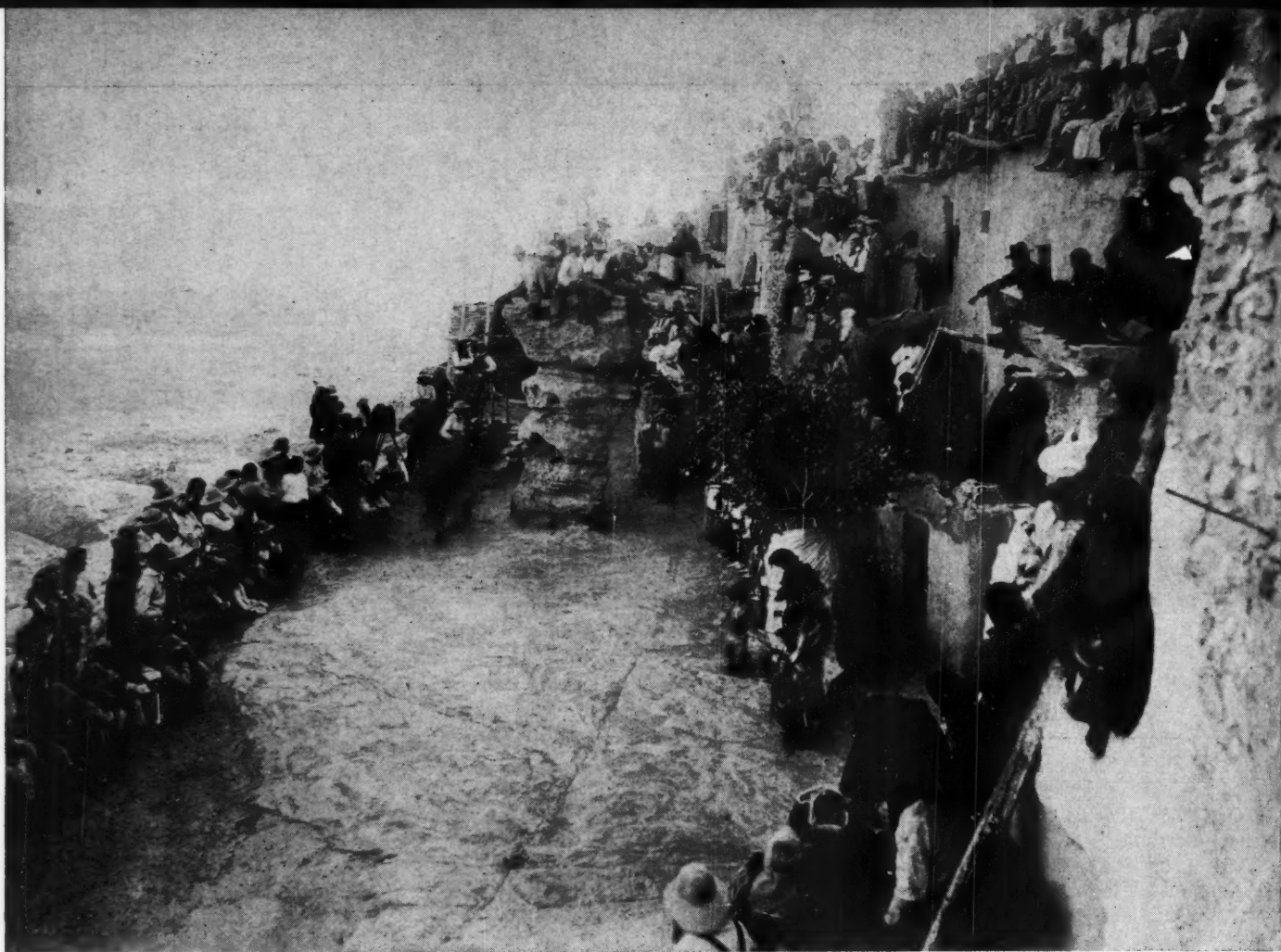
"That I do not believe!" I told him firmly.

"Believe it or not it's true," he said, and Marta nodded in confirmation. Nahe said something about having learned his snake lore the hard way, and continued his story.

"A rattlesnake has two fangs, is born with them, and yearns to make use of them within an hour after birth. Each fang is solidly fastened to a movable bone of the snake's upper jaw, and each one is connected with a gland full of poison behind the eyes. These fangs are shed two or three times a year. But before the snake lets loose of a fang he has grown a new one just beside the old one and it has been cut

*Sidewinder or Horned rattlesnake. Its poison is very potent.
Photo by National Park Service.*





Sacred Rock at Walpi where the Snake dance is held. A few minutes after this picture was taken the Antelope clansmen emerged from their kiva, followed by the Snake priests. Photos of this scene are no longer permitted. Photo by Crandall, courtesy National Park Service.

into the poison canal. The old fangs are shed by becoming caught in whatever the snake bites. And so this sidewinder's fang hung on the old man, and now it's in a little pottery bowl on the snake altar being saved for use in the Snake dance."

"You remember I used to comment on the several kinds of rattlesnakes used in the dance," I said to Nahe and he nodded his head.

"We sometimes have five or six kinds of rattlers at a Dance. There's the Bleached rattlesnake. That's the dusty pink one that doesn't get excited about anything, just sort of limply dangles through all the ceremonies. Then we sometimes catch the big Desert rattler and the Mojave diamondback. The Western diamondback is the big showy fellow. It was one of those that first bit me. They are always nervous and full of fight. They just wind up and wait and dare anybody to come near. And of course there's the Horned rattler, the one you call 'only a sidewinder'."

"Well, I apologized, didn't I?" Nahe grinned, and those folks that believe an Indian has no sense of humor should have shared that boyish grin.

"Yes, you fixed it all up. Next time you watch a dance, you notice how carefully the younger men avoid contact with side-

winders. They are left to the expert priests and treated with respect. You'll see that those little snakes land fighting when they are tossed from the dancers' mouths."

"They squirm so much maybe the dancers have to hold them so tight they hurt them with their teeth," I suggested.

Nahe reached across to where Marta keeps her pottery materials and brought out a lump of soft creamy clay.

"Before the dancers leave the kiva they fill their mouths full of this clay. It coats their tongue and the inside of their mouths so they can't taste, and it fills in between their teeth and covers all sharp points. That's to protect the snakes."

"I always thought whatever they held in their mouths was a sort of antidote for snake bite," I hazarded. "And, too, I've heard lots of people insist that the snakes have their fangs pulled out just before the dance, or that they are made to strike into a sheep's liver until the poison sacs are empty."

Nahe thought for a while. When he spoke he completely ignored my first and last suggestions.

"If their fangs were pulled and they couldn't bite, why should we watch them so carefully and keep the prayers going? If they had their fangs pulled who is brave

or foolish enough to pull them? There are four kinds of plant roots used to treat snake bites among the Hopis. I only know about one of them. It is what the Mexicans call golondrina, and we name it rattlesnake weed. Every Hopi house is supposed to have some always ready for use. You know that one of the obligations of the Snake order is to treat any Hopi bitten by a snake. I've seen part of the treatment. The patient gives the Snake priest a bundle which contains a gift, and the priest prays over it, then treats the bite and the one bitten gets well pretty soon."

When I reached a reference library I delved into botany to try and locate Nahe's golondrina. In Kearney's *Flowering Plants and Ferns of Arizona* I found this: "Euphorbia (Spurge): Certain species, such as *E. albomarginata*, are known as rattlesnake weed, and by the Mexicans as golondrina. They are popularly supposed to be efficacious in treating snake bite, and the root of *E. albomarginata* is said to have been used as an emetic by the Pima Indians."

"How did you get out of being a Snake priest?" I wanted to know.

"I was afraid of rattlesnakes, and so I was allowed to be a sort of step-child of the Clan," he said.

LETTERS...

On the Origin of Cactus . . .

Banning, California

Dear Mr. Henderson:

I was very much interested in the article in your May number of Jerry Lauder-milk on the 'Dawn Cactus of Green River' as the geological history of the Cacti seems to be so very obscure. In fact, until recent times it was supposed to be indigenous to the Western Hemisphere. I understand that Luther Burbank in his studies at Santa Rosa worked on the assumption it was developed from the drying up of the south-western portion of North America and acquired its spikes for protection against foraging animals and changed its shape the better to procure and hold moisture. He worked in reverse by giving ample moisture, etc., and so developed spineless edible cactus.

I note the 1931 Funk and Wagnalls encyclopedia says of the Eocene epoch that the flora laid down in England was of the Indo-Australian character, palms, screw pines and cypress in the earlier, and gum, nettle tree, banksia, with aroids, cacti, laurel, cypress and yew, also maple, plane, willow, poplar, elm, beech, chestnut, hornbeam, walnut, fig, etc., in the later time, indicating a gradual cooling period. I have been unable to discover any cacti finds in the rock formations of India or Australia although the latter is generally considered the oldest continent.

I think this a very interesting topic and as your magazine is published in the center of the cactus world an excellent subject for further articles and discussion.

ERNEST FULLER, C. E.

Keeping Out the Bugs . . .

Fultonville, N. Y.

Dear Mr. Henderson:

In the last Desert I note what you say about sleeping out. It's great! However, I have several friends who, while liking the outdoors, are reluctant to sleep on the ground because of bugs, snakes, and what have you in the way of night prowlers.

This annoyance can be overcome by a tent-like affair of cheese-cloth. It may be of one piece if one does not care to bother with sewing. Here's how: Place a big sheet of cheese-cloth on the ground. Make up the bed in the middle of it. Then fold the ends over the bed. Set stakes in the ground at each end, fixed so a loop on the cheese-cloth can be fastened to them. Fold in the surplus cloth and pin if necessary. The top is stretched tight with guy ropes. A person who is handy can improve on this by making a cheese-cloth tent.

It is no protection against weather, but it is proof against bugs.

MRS. A. C. BOSTWICK

Art of Camp Cooking . . .

Bremerton, Washington

Dear Mr. Henderson:

In my opinion it seems that the fine old art of campfire cooking is a possession of far too few people. My mouth fairly waters when I recall the good things my father used to produce with his Dutch oven when we spent an occasional vacation high in the Cascade Mountains. Among the things that we enjoyed were pan bread and syrup for breakfast and huckleberry dumplings for lunch or dinner.

We still have the Dutch oven but neither the knowledge nor skill to use it, so I wonder if there is enough interest if we may not have a page now and then in Desert devoted to campfire and Dutch Oven recipes. I would like to know also how to use the deep pit method of baking, where food is buried for hours in a covered pit that has been previously heated.

I was interested in Marshal South's account of mescal roasting and their method of baking bread in the fire place coals.

MRS. L. M. NELSON

No doubt there are many Dutch Oven experts among Desert's readers. We'll appreciate hearing from some of them—in answer to Mrs. Nelson's inquiry.
—R. H.

Those Indian Gongs . . .

Walnut Creek, California

Gentlemen:

This is a delayed letter about Indian gongs. I believe it was your January issue in which some one asked about them, and later a writer from a museum stated that he did not know about the existence of any among North American Indians.

I was manager of a store in Siskiyou county for many years, and nearly always had a large display of my polished mineral specimens and cut stones in a showcase in the store.

This was quite an attraction and many came to see them, including several Indians who became my friends.

One day one of the Indians came in and said: "Mac, I have a rock for you in my car." I went out with him and there was a piece of Happy Camp jade (Californite) so big it took the two of us to lift it out of the car.

We got to talking about Happy Camp jade and he told me that when he was a child his mother had a large piece that was flat and thin. This hung at their back door and was used as a gong to call the children to their meals. Another piece of jade was used to strike the Indian gong.

M. Z. RUSSELL

Never "No Vacancy" Sign Here . . .

Baltimore, Maryland

Dear Sir:

I was interested in your comment in the July issue. I have solved the problem of lodging on my gem field trips by rigging up a very comfortable bed in the turtle-back of my Chevy coupe. With my bedroll I carry two small air mattresses, a pillow, sheets and pajamas. After a long day's hiking it is a great luxury to take a rub-down in a basin of water and sleep in pajamas between clean sheets.

With a little improvising, a comfortable bed can be made in many of the coupes now being used. It is surprising how much space there is in many of the cars. With such an outfit and a box of grub one can travel with a great feeling of security. And if one will take the trouble to stop at the first town when he starts out in the morning and fill his thermos bottles with cold milk, juice and water—that is a luxury plus.

J. W. ANDERSON

Hazards of the Arroyos . . .

Los Angeles, California

Dear Mr. Henderson:

Are the dry washes you advised "tender-feet" to sleep in (last issue) when camping on the desert, safer in California than in Arizona? I was taught their dangers so thoroughly in Arizona that they almost had me scared to cross one.

GRACE PARSONS HARMON

Dear GPH: It is true, in rare instances, there is a certain amount of hazard in camping in an arroyo. But desert cloudbursts, like desert rattlesnakes, are such a rare occurrence in those areas accessible to campers, as to offer little danger. I have been waiting 20 years to get a picture of a cloudburst torrent in action. It is true in the plateau country of northern Arizona where summer rains are frequent that one should be on guard against flash floods. But I daresay that 10,000 lose their lives on the highways of the Southwest, for every victim of a desert rain storm.
—R. H.

Gila Monster in Nevada . . .

San Francisco, California

Gentlemen:

Your news item "Gila Monsters Coming to Nevada" interests me.

I lived in Las Vegas two years. A few months before I was drafted into the army, Mrs. Dora Tucker, a grand old lady of the desert, and I saw a gila monster about 20 miles out of Las Vegas. It was near a dirt road not many miles this side of the Valley of Fire.

He was a beauty. We stopped the car, and when we approached him he gave us the air, and an open mouth.

EVERETT BERRY



William P. Krehm

MY FIRST meeting with Bill Krehm was the day he and Jimmy Swinnerton stopped at my roadside studio on their way to the desert on a sketching trip. Their car was loaded with painting equipment and their camping outfit.

They were in high spirits. Jimmy, because he loves the desert wilderness and looks forward to every opportunity to return to the field where so much of his fine work has been done. For Krehm, this was to be an adventure of double enjoyment. He had just recovered from a lingering illness that had forced him to give up his work in a war plant, and this was his first real outing in months. And then, he confided to me that Swinnerton had been one of his boyhood idols, and he felt it a rare privilege to be the companion of one who had won so high a place in the world of art. "It's fun to go sketching with Jimmy," he said. And we both realized this was an understatement.

Those trips with James Swinnerton and other topnotch western painters are the climax of a long hard pull along the road of art for William P. Krehm. He has overcome obstacles which would have discouraged and perhaps beaten a less determined man.

He was born in 1901 in Kansas City, one of a family of eight children. At ten he was getting up every morning at four o'clock to sell papers for the Star and Journal. And after school there were the afternoon editions to sell. This did not leave him much time for his hobby—which was drawing pictures.

He was a great admirer of Swinnerton's cartoons—Little Jimmy, Pinky, Beans and Toby, and he spent hours trying to reproduce these characters. Drawing was not in the curriculum of the public schools in those days and when he stole time from

Gems of the Desert

As a fledgling artist, Bill Krehm had little opportunity to meet the top-flight painters from whom he might get help in improving his technique. So he went into the picture framing business—and made such fine frames the successful artists soon were coming to him for their woodwork. It was good strategy—and this month Krehm's work is being shown in one of Los Angeles' best known galleries.

ART--the Hard Way

By JOHN HILTON
Art Reproductions by Bill Krehm

the three "R's" to do his sketches, there was trouble with the teacher.

Bill joined the navy in 1918 and saw service on the U.S.S. Wisconsin and the U.S.S. Kansas. He later served on the U.S.S. Washington which brought the King and Queen of Belgium and Prince Leopold on their visit to the United States. All through this service he made sketches of the places and scenes that were attractive to him. He never lost sight of his interest in art.

After his discharge he returned home for a few months, but was restless. He wanted to see more of the world, and sketch and paint what he saw. He went to St. Louis and got a job on a river boat going to New Orleans. He hoped to sign on a freighter that would take him on a long cruise, but jobs of this sort were hard to find and he failed to get a berth.

He went to Chicago and got a job as a switchboard inspector for Western Electric. In 1926 he went to California to try to ship on a boat from San Francisco. He

hoped to see and paint far off places—the islands of the Pacific, China, Japan, India and other parts of the Orient. While waiting for an opportunity to get such a berth, he visited the art galleries in Los Angeles and after studying the paintings of contemporaries decided that he should have more training before he attempted to go out and paint.

He postponed his trip indefinitely and tried to get acquainted with the artists who had produced the paintings he admired. This was not so easy, but Bill was a persistent fellow and he finally hit upon a plan.

He decided the way to meet artists was to go into the making of picture frames. He got other work to support him and began doing picture framing on the side. He wasn't satisfied with making ordinary picture frames. His ambition was to produce the sort of frames that would be in demand by the very topnotch painters. This took study and application. It was a roundabout course but he never lost sight of his goal.

Finally in 1930, the depression threw



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Agatbla Peak — Arizona

a great deal more in the desert than most artists and he was willing and eager to teach his friend how to see these things too, and to put them on canvas.

His pictures were exhibited at the San Francisco fair, and have been hung in a number of the state fairs and in lesser shows. Art critics who saw these few paintings have been more than favorable in their comments. Now Krehm has his real chance. The Biltmore Art salon has invited him to present an exclusive exhibit of his most recent work during the current month of August.

I have seen about half of the canvases that will be on display in this show and it is my belief that they will stand up with other work shown in this discriminating gallery. James Swinnerton says of him:

"For years Bill Krehm framed the paintings of other artists. He was compelled in many instances to handle work that was not worthy of a really fine frame.

"On the other hand, some paintings that passed through his adept hands were an inspiration, and he sought faithfully to make the frame worthy of the picture.

"His previous fine artsmanship fits him to do a finished job of actual brushmanship, and he has a fine sensitive eye for color. Most of all, he has the aptitude for hard work at the easel, and that is the only way to learn and keep on learning to the end of our days."

It is my opinion that after the Biltmore show, thousands of other art-minded people in the West will be saying other complimentary things about Bill Krehm.



him out of his job and he went into the framing business on a larger scale. This was a blessing in disguise. Soon the artists were getting acquainted with Krehm frames and Bill in turn was getting acquainted with them. He had entry to the best studios and galleries of the country and found many a helping hand among the artists whose paintings he was framing.

He studied with Dana Bartlett and later with William T. McDermitt, former art director of the Pullman State College in Washington. It was Jack Wilkinson Smith, however, who really opened his eyes to the finer points of painting. Under his direction Krehm's canvases began to take real life. During this period he made trips into the deserts of Arizona, California and Utah. In them he not only found all the adventure he had longed for, but an unbounded source of painting material. Through all of this period, Bill gives great credit to Jack Wilkinson Smith for his real development and progress.

His paintings were beginning to sell but few who bought them had ever heard of him. This is the problem faced by most aspiring artists and it probably will always be the same. He continued making better frames.

If his paintings were not famous, his frames were well known among the good artists in the West. Most of these painters in turn were willing to lend a helping hand in the way of suggestion and criticism and Bill was humble enough to take these suggestions and criticisms and profit by them.

In 1937 William Krehm the budding artist and topnotch frame maker met James

Swinnerton his childhood idol who in the meantime had taken up serious painting and was bringing the desert into the galleries and homes all over the United States. This meeting must have been a distinct thrill even though at first their common interest was limited to picture frames. It was not long before a friendship developed, for Jimmy is that sort of a person. The friendship led to sketching trips and informal instruction that were invaluable to Krehm. Swinnerton with his background of 40 years of desert painting could see



Lure of the Desert

SEPTEMBER, 1945



In the rocky terrain around their homestead cabin, Frank and Anna Bull have found hundreds of Indian artifacts.

Cabin in the Rocks

When homesteaders moved in years ago to take up the government land in Yucca valley they shunned the jumbleland of granite that rimmed the valley on the north and west. It was a fit place only for jackrabbits and lizards—they thought. But years later Frank Bull in quest of a quiet retreat where he and his wife could spend the late years of their lives, found among the rocks just the site they wanted for their home—and it has brought them a rich return in health, peace and independence.

By MAUDE A. FOX

Photographs by Harlow Jones

IF THE ghosts of the desert Indians who once lived and hunted in the foothills along the north side of California's Little San Bernardino mountains ever decide to go out looking for the kitchen utensils of their prehistoric ancestors, they'll find a big quantity of them decorating the cabin-yard on the homestead of Frank N. Bull.

The Bull cabin, tucked away in a little rock-rimmed cove among junipers and piñon pines 30 miles northwest of Twentynine Palms village, is literally surrounded by ancient Indian metates and manos, all neatly arranged in rows and symmetrical designs.

Most of these artifacts were found on Frank's 160-acre homestead. When I asked him how many there were he answered: "There are 180 here, and I've given away about 80."

Gathering Indian relics on their homestead is the hobby that has kept Frank and Anna Bull active and enthusiastic during the eight years since Frank gave up his job as a machinist in Long Beach and came to the desert for health and the enjoyment of their late years.

With each metate is its mano, or grinding stone, with one side worn straight and smooth by the ancient Indian women who used these crude stone tools to crush mesquite beans, acorns, and edible seeds from many of the shrubs which grow on the desert.

At several places on the homestead metate cavities are found on boulders too large to be moved. Frank likes to take his visitors on a roller-coaster ride over the hills and across the ravines to see the old Indian campsites. At one of the springs in

a nearby canyon faint pictographs still may be seen on the rock walls.

The Bulls keep their yard and home clean and orderly. Every rock is in its place, and no debris finds lodgment in their neighborhood. But they have been careful not to destroy any of the natural landscape. They are in the zone of juniper, piñon, joshua tree, yucca, agave, goatnut, wild apricot and many of the Upper Sonoran species of cacti—and when there are winter rains they find a gorgeous display of wild-flower annuals among the great boulders of granite rock which cover much of the landscape.

At present they are hauling water to the cabin from a nearby spring, but their plans include the development of a more convenient water supply in the future.

It was no accident that led Frank to locate on this rocky claim in the heart of the Mojave desert's Joshua tree domain. He spent months searching the California desert for a homesite. "I wanted a homestead high enough to be comfortable in summer, where the atmosphere is dry enough to be beneficial to sinus ailments. And when I came to this spot and found the spring just over the hill, I knew my quest had ended," Frank said.

"According to government surveys we have 160 acres. But surveyors figure only in air miles. If you include the surface of

THE DESERT MAGAZINE



Frank and Anna Bull at their desert homestead.

all the rocks and ridges and pinnacles in this quarter-section I've got at least 340 acres."

For agricultural purposes, the "340-acre" Bull homestead isn't worth five cents. And probably never will be. But measured in terms of economy and health and contentment it is the most valuable ranch in the world to Frank and Anna. It is the kind of retreat that many people dream about as they approach the age of retirement, and few ever acquire, for the simple reason that most human beings are reluctant to break with the habits and associations of a lifetime and do the necessary pioneering.

Although the Bull cabin is many miles from the nearest paved highway, hardly a weekend passes that there are not visitors—folks who come to see the rocks and relics Frank has collected, or just to enjoy the hospitality of two happy people living in complete independence.

Once a week Frank drives the 1934 model car which he keeps in fine running order to Twentynine Palms for groceries and supplies. Once or twice a year, before the war, they would go to the big city on the coast for a few days. And they'll tell you that "the best part of the trip was in coming home again to the desert."

Onie Jones—one of the neighbors from Twentynine Palms—tries her hand with an Indian grinding mill.



Frank likes to show visitors the prehistoric stone tools and weapons he has gathered on his homestead. "I didn't know a thing about archeology when I came here," he explains, "and I don't know much yet, but archeologists often come here, and from them I learn about the use of some of these odd-looking stones." Hundreds of bits of broken pottery are scattered over the area, but Frank so far has failed to find an olla intact.

Frank Bull was an army captain in World War I and they have a son in the overseas service now. A big picture of him hangs in the living room of their cabin.

The Bulls have had many opportunities to sell their homestead, and they have been urged to build cabins and turn it into a resort. But they are not interested. "We are rich enough now," Frank explains. "We have the wealth of regained health, the wealth of the beauty and the freedom of the desert, and the wealth of hundreds of friends. And those are the things that count most."

"Coachella" Not Typographical Error

Common story that Coachella valley's name originated when through typographical error it was spelled that way rather than the intended "Conchilla" (little shell) is refuted by C. E. Holcomb, Fullerton, who says name was created from first syllable of Coahuilla, native Indian tribe, with ending suggestive of shells.



*Seagulls are not always as friendly as this pose might indicate.
Photo by Dr. W. H. Hopkins.*

Bird Island in Great Salt Lake

By CHARLES KELLY

JIM BRIDGER, credited with the discovery of Great Salt Lake in 1824, was a man of vivid imagination. He and his half-wild trapper friends conjured up many stories about that mysterious body of water, some almost equaling those of ancient Greece. In its center was supposed to be an immense whirlpool with an underground outlet. Anyone caught in its vortex disappeared forever. Islands visible in the lake were said to be covered with strange vegetation and inhabited by giants half

human, half animal. Some were thought to contain treasures of gold and precious stones.

These myths were not dispelled until 1843 when the explorer John Charles Fremont made a voyage to one of the larger islands in a rubber boat, accompanied by Kit Carson, who still believed the trappers' stories. Fremont found the island barren of animal life and covered with nothing more startling than desert sage and grasses. The other islands were not visited until 1850

when Captain Howard Stansbury explored and mapped the entire lake and its vicinity. He found one small island, looking at a distance like a flat-crowned hat, densely covered with colonies of nesting birds.

Great Salt Lake is a large but shallow body of water containing 22 per cent or more of salt. Its surface is frequently whipped by the wind into waves which, although never very high, are heavy and dangerous to small craft. Although a body cannot sink in that brine, anyone thrown out of a boat in rough weather is soon strangled by the bitter water. For this reason boating on the lake was never popular until dependable power boats made it a reasonably safe and pleasant sport.

That explains why I spent so many years in Salt Lake City before visiting any of the islands. Viewing them from shore I was as curious as the old trappers, and was particularly delighted when a friend, Leon Stanley, invited me to accompany him on a voyage to the little hat-shaped island now called Bird Island.

Leon had built a sturdy little speedboat called *Boots*, driven by a powerful inboard motor which he said was thoroughly dependable. We left the pier at Saltair about ten o'clock on a bright day in May, with the deep green lake as smooth as a pane of glass. The motor purred at the first twist and within a few seconds we were skimming over the water at a high rate of speed. Leon steered a course due west toward the middle of the lake.

The motor's exhaust made conversation difficult, but Leon pointed out various islands as we passed. Antelope on the right, Stansbury and Carrington on the left—all appearing strangely different from the usual shore view. Finally, in somewhat less than two hours, a small low island which had been invisible before, seemed to suddenly rise from the water dead ahead. This was our destination. We had traveled 30 miles. As Leon cut off the power we drifted in toward a small rickety pier and made fast.

At first glance Bird Island was a disappointment. It contained only 22 acres,



with its highest point 40 feet above high watermark. But the reason for its modern name was soon evident. Frightened by the roar of our motor thousands of gulls rose from the rocky ground, screaming until conversation became difficult. In the distance groups of large white pelicans with black-tipped wings took to the air in graceful wheeling formations.

We had walked only a few paces on land when I accidentally stepped on an egg whose natural camouflage made it almost invisible. Looking carefully for the nest from which it had rolled I found the entire surface of the ground thickly sprinkled with gull's eggs, but nowhere any sign of a nest—not even a small depression. They were lying everywhere, in some places so close together we could hardly step between them.

Gulls screamed at us as we passed, occasionally diving to strike at our hats. After we passed they returned to their eggs and to their interminable quarreling. They are descendants of the same gulls which saved pioneer Mormons from starvation by destroying a plague of black crickets and for that reason have always been protected by law. In fact the California gull (*Larus californicus*) is the Utah state bird. This was their great nesting ground where they could raise their young undisturbed by natural enemies.

As we picked our way carefully along the shore I noticed a large compact group of white objects in the distance.

"Are there sheep on this island?" I asked Leon in surprise.

"No," he laughed, "those are young pelicans, although they do look from this distance like a herd of sheep."

When we approached them the similarity was obvious. Several hundred young pelicans, still covered with white down although nearly full grown, were tightly jammed together in a herd, aimlessly waddling about in awkward movements—one of the strangest sights I had ever seen. While their parents were away fishing during the day these ungainly infants gathered in large groups, squawking and pushing



Young pelican gets its dinner a la beak. Adults fly 70 to 100 miles to bring food for their young. Photo by Dr. W. H. Hopkins.

In the early days of Utah settlement many tales were told of the strange denizens that inhabited the little-known islands of the Great Salt Lake. More recent explorations have removed all mystery as to the character and habitation of these islands. Here is the story of what Charles Kelly and a companion found when they reached one of the islands by motorboat several years ago.

each other, exercising their legs while waiting for their feathers to grow.

The adult birds (*Pelicanus erythrorhynchos*) returned near sundown with fish in their enormous gullets to feed their young. Later, when these had been digested, skeletons and heads were regurgitated on the ground, which made the young pelicans and their entire vicinity smell to high heaven, somewhat dampening our curiosity. As we walked toward one group the birds slowly waddled away from us, jamming together and pushing one another until some of the weaker individuals were trampled to death. That this occurred even without

our disturbing presence was evidenced by the number of dead and flattened young pelicans in the vicinity. There were several such flocks on the island, each with its separate "herd ground."

From this nesting ground adult pelicans fly to the mouths of various streams or even to Utah Lake for fish to feed their voracious young. Their shortest round trip is at least 70 miles and they frequently fly more than 100 miles each day. Surrounded as they are by salt water the young pelicans, gulls and other birds never taste fresh water until they are mature enough to fly to the mainland. Gulls have an easier life than

Showing almost the whole of Bird Island where 20,000 gulls and 4000 pelicans once nested every year. As a result of drought years and evaporation in the Great Salt Lake, the island is now connected with the mainland and has been deserted by most of the birds.

Photo by Wally Bransford.





Leon Stanley with a half grown Blue Heron on Bird Island.

pelicans, since part of their diet consists of the tiny brine shrimp (*Artemia gracilis*) found abundantly in the waters of Great Salt Lake.

Although gulls are beautiful and interesting birds, they have some bad habits. During nesting season male and female pelicans alternate in covering their eggs, since if left for a single moment gulls pounce on them and perforate the shells, destroying the embryo.

Leaving the odoriferous pelicans, Leon and I explored other parts of the island. On the highest point we found several nests of blue heron (*Ardea herodias treganzai*) built of small sticks high off the ground to accommodate their long legs. While such nests were not numerous, each was occupied. Double crested cormorants (*Phalacrocorax auritus auritus*) also are said to nest here, but we were unable to find any although other visitors had seen them. These four varieties seem to include the entire bird population.

We were unable to estimate the number of birds on the island, but Dr. Lockerbie, who has made a study of the subject, says the usual population consists of about 20,000 gulls, 4000 pelicans, 15 blue heron and 20 cormorants. All this on 22 acres of rock and sand, with scant vegetation, at least 35 miles from the nearest fresh water. Birds also nest on some of the other islands but nowhere in such great numbers. In early days guano was removed from Bird Island, the workers living in a small shack shown in one of the accompanying photographs.

It was late in the afternoon when Leon and I returned to the boat, although there was still sufficient time to reach the mainland before complete darkness. But when we tried to start the motor it refused to go, as motors sometimes do, especially marine motors on Great Salt Lake where the water

contains so much salt. After half an hour of futile priming and cranking Leon decided to investigate the innards of the balky engine, while I stood by nervously calculat-

California Gull: Adults have grey mantle, black wing-tips, black on under side of tip being cut straight across "as if dipped in ink." Distinguished by red or red and black spot on lower mandible of bill. Young during first year are dusky brown throughout, with flesh-colored bill black-tipped. In second year it is paler, white below with more white at base of tail. Breeds on inland lakes from Canada to California.

White Pelican: Wing-spread of nine feet with black primaries in wing and a great yellow throat-pouch. Flies with head hunched back on shoulders, long flat bill resting on curved neck. Breeds on inland lakes, Canada to California, migrates through interior to Mexico.

Treganza's Heron: Subspecies of Great Blue Heron, found in interior from east Washington and Oregon, south Idaho and Wyoming to southeast California (Salton Sea) and Mexico, east to central Colorado. Often called "crane," about four feet high, blue-grey color, whiter about head and neck.

Double - Crested Cormorant: The common cormorant on large inland bodies of water in western U. S. Differs from coast cormorants by bright orange-yellow throat-pouch.

ing the remaining time before sunset. There were no lights on the boat.

After much tinkering Leon got the engine together again and turned the crank. It started with a purr which was music to our ears and soon we were speeding toward

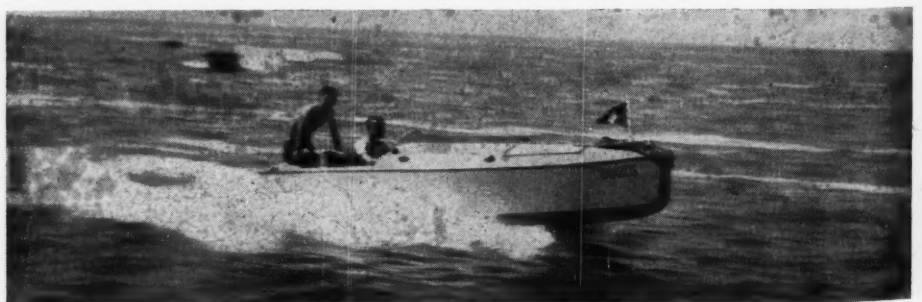
Saltair. The setting sun, painting the sky with brilliant color which was doubled by reflection in the water, and casting deep purple shadows on distant mountains, furnished a magnificent panorama which alone was well worth the trip. Leon had planned to return before the usual sunset breeze set in, but engine trouble had delayed us and now the speeding boat began slapping small waves heavy with salt. Instead of dying out with darkness the wind increased, raising such large waves that we had to creep along at what seemed a snail's pace to avoid smashing the thin hull. Each wave threw spray over the boat and we were soon covered with a crust of salt. To prevent salt water from reaching the ignition system Leon covered the engine with his coat, then sat shivering at the wheel, glancing now and then at his compass with a flashlight. Although the night was clear there were no guiding lights, since no one lives near the barren lake shores.

It was ten o'clock before we picked up the distant lights of Saltair and past midnight before we finally made fast to the pier there, thanking our lucky stars the temperamental engine had not taken a notion to quit in the middle of the lake.

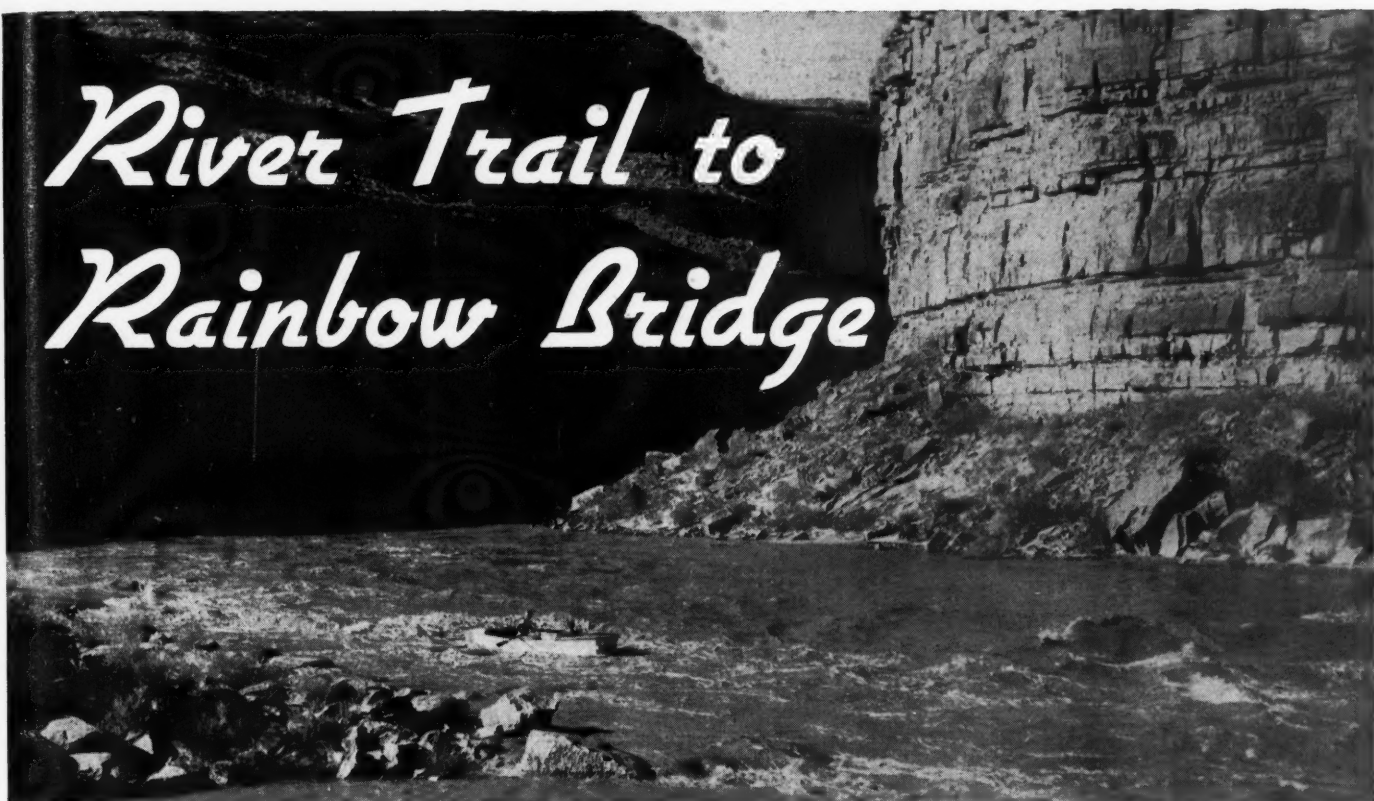
Since that interesting voyage, made several years ago, Great Salt Lake has steadily diminished in size, following years of drought. As it receded it became finally a saturated solution, depositing a layer of solid salt on the bottom. Feathers of pelicans swimming in this solution became so impregnated with salt they were unable to rise from the water and as a consequence thousands died.

Because of this long continued recession Bird Island is at present connected with the mainland by a sandbar, allowing predators to reach the nesting ground. As a result all birds have abandoned the place, making their nests on other islands or moving to Utah Lake, 45 miles south. It may be many years before the lake rises to its old level and the birds again take possession of their favorite nesting ground. Thanks to Leon Stanley I was able to visit Bird Island before it was abandoned by its feathered population, when it was still the most interesting spot in mysterious Great Salt Lake.

Leon Stanley and the author off for Bird Island in the speedboat Boots.



River Trail to Rainbow Bridge



PROBABLY the most inaccessible and least known region in the United States is that wilderness of sand and limestone buttes and bluffs and chasms in northern Arizona and southern Utah known as the "canyon country." The Navajo and Ute Indians have dwelt there for years—but to most Anglo-Americans it remains a labyrinth of impenetrable gorges and unscaleable walls. It is the mystery and beauty of this

region which has given increasing interest to the boat trips which Norman Nevills and other rivermen have been running down the San Juan and Colorado rivers. By boat, one reaches the very heart of this wild region. Most popular and least hazardous of the river trips is from Mexican Hat, Utah, down the San Juan to Lee's Ferry on the Colorado in Arizona—and this is the story of that trip, a 7-day voyage of 191 miles.

By RANDALL HENDERSON





There were 13 in the river party: Back row, left to right—Wayne McConkie (boatman), Francis Farquhar, Marjorie Farquhar, Frank Cooke, Marjorie Cooke, Alfred M. Bailey, Father Harold Baxter Liebler. Front row—Skipper Norman Nevills, Patricia Bailey, Randall Henderson, Fred G. Brandenburg, Weldon F. Heald and Don Bondurant (boatman). Photo by Fred G. Brandenburg.

THE ENTIRE population of Mexican Hat, Utah—14 persons including transients—was on the sandbar when we shoved off June 15 for our seven-day run down the San Juan river to its junction with the Colorado and thence through Glen canyon to Lee's ferry in Arizona.

This was Norman Nevills' second San Juan excursion for the 1945 season—four boats, three boatmen and ten passengers.

The Indians in the canyon country refer to Norman's boats as "water ponies—all time buck." That is a fairly accurate description, but Nevills, who engineered and built the boats himself, has more alluring names.

There was the *Music Temple* piloted by

Skipper Norman, with Marjorie and Francis Farquhar of Berkeley, California, and the writer as passengers. Next was the *Hidden Passage* with Wayne McConkie at the oars. Wayne is a level-headed Mormon boy who teaches biology and manual arts at the Moab, Utah, high school and spends part of his vacation time on the river because he likes it. Riding with Wayne were Alfred M. Bailey, director of the Colorado Museum of Natural History at Denver, his 19-year-old daughter Patricia, and Fred G. Brandenburg, assistant curator of birds at the Colorado museum. Bailey was making the trip to secure kodachrome movies for next winter's national lecture tour.

Don Bondurant, a young civil engineer in the service of the War department at Albuquerque had obtained leave of absence

to join the Nevills expedition as oarsman in the *San Juan*, third boat in the fleet. Passengers with Don were Father Harold Baxter Liebler, founder and director of St. Christopher's Episcopal mission for the Navajo at Bluff, Utah, and Major Weldon F. Heald, Altadena, California, who recently returned to inactive duty after three years service in the Quartermaster corps.

Nevills had planned to take only three boats down the river. But the day before departure, Frank and Marjorie Cooke of Cambridge, Mass., touring the West on their honeymoon, arrived at Mexican Hat and asked to join the excursion. Frank had had some experience with the oars, and he and the bride were eager to make the trip, so Norman launched a fourth boat, the *Rainbow Trail*—which was promptly re-

Mexican Hat lodge, owned by Mrs. Mae Nevills, Norman's mother. Here the party assembled from California, Colorado, Utah and New Mexico for the river excursion.



christened by members of our party as the "Honeymoon Special."

The gauge at Mexican Hat showed a flow of 8300 second feet the morning we left Mexican Hat. This is high water in the San Juan. Norman was happy. He prefers high water when he runs the San Juan and Colorado.

The discharge in the San Juan fluctuates widely from day to day and month to month. When snow is melting in the Rocky mountains, or when there are cloud-burst floods in the drainage basin the stream surges high between its canyon walls. In September, 1927, a flash flood reached a peak of 70,000 second feet. In 1896 and 1934 the stream was virtually dry.

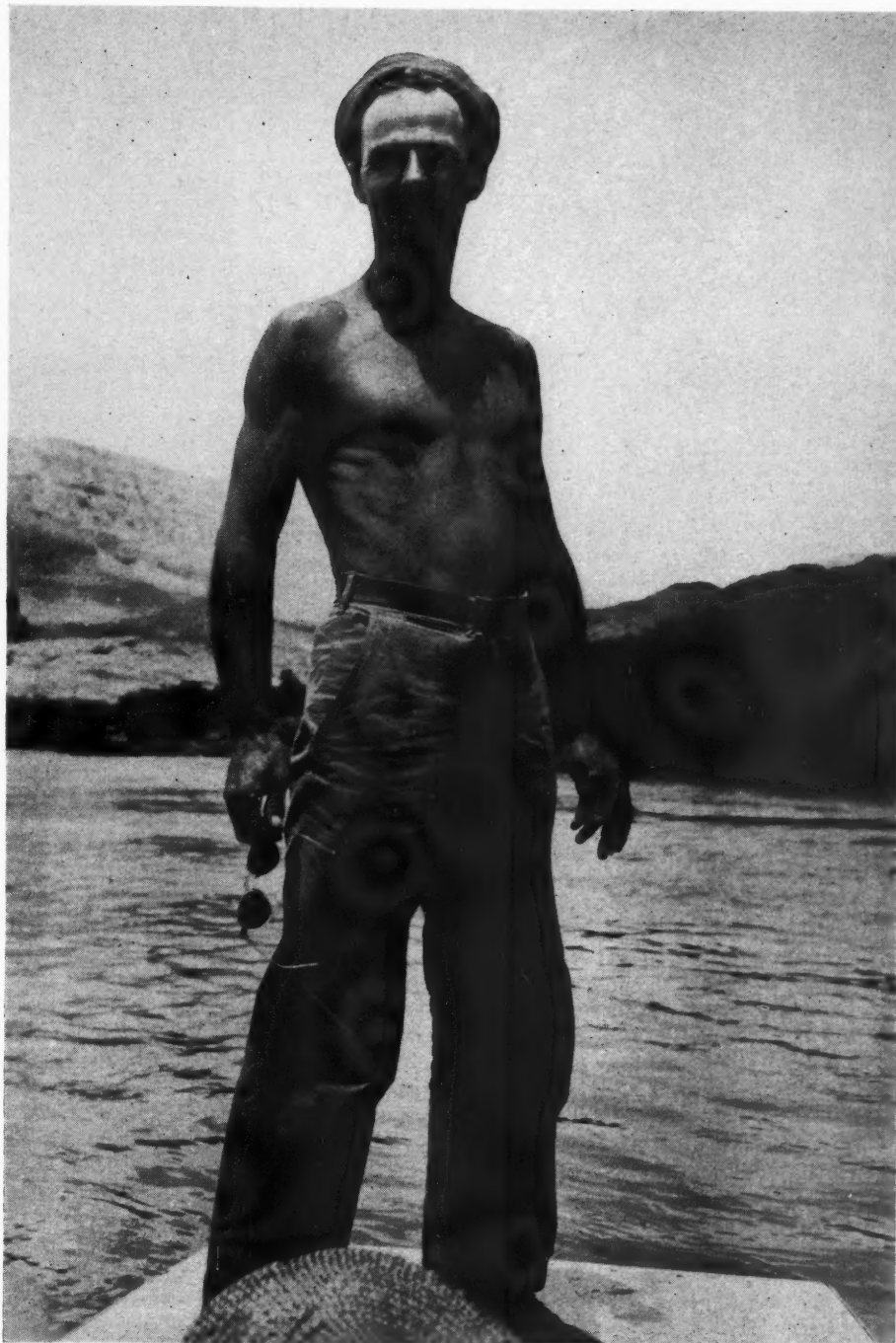
The story is told of James Douglas, a mining man who found rich placer values in a bar below Mexican Hat during a low water period in 1909. Before he could bring equipment to recover the gold, the river rose and covered the bar. Douglas waited 20 years for another low-water stage when he could resume operations—and then ended his heart-breaking vigil by jumping off the bridge at Mexican Hat. Five years later the river went dry.

I soon learned why the Indians say Norman's water ponies "all time buck." The San Juan at this flood stage is fast water. When it isn't piling up against submerged boulders, it forms sandwaves, often three and four feet high, one after another in parallel series. We soon learned that these waves are quite harmless, and it became one of the popular diversions of the trip—steering into the sandwaves while the boat bucked and tossed like a ship in a storm. Hitting them stern or bow first, the boat reacted like a slow-motion bucking pony. We preferred to take them broadside. It was like a rubber-cushioned roller-coaster.

Occasionally one of the waves would break at the wrong moment and the passengers would get a splashing. But in the midsummer on the desert wet clothes are refreshing, and when the river failed to give us an occasional ducking, members of the party would dive overboard and paddle along with the boats as they floated downstream.

Soon after leaving Mexican Hat we entered the Goosenecks, where the San Juan meanders between its canyon walls in a series of dizzy turns resembling the gyrations of a mammoth sidewinder. The boats travel six miles to gain a mile in their westerly course. Just below the Goosenecks we pulled to shore and loafed on a sandbar while we ate the sandwiches Doris Nevills had prepared.

During the afternoon we came to the first white water riffle of our journey, named Government rapids. Two government survey boats are reported to have gone on the rocks here during an early period when boats were not as well designed for this kind of water as they are today.



Norman Nevills—he never lost a passenger or a boat.

"Yogi!" the skipper shouted as we headed into the swift water. And thanks to Yogi, or to good oarsmen and well-built boats, we rode the crest of the main current, missed a score of projecting boulders and within a few seconds emerged from the rapids with only a mild splashing to show for the experience.

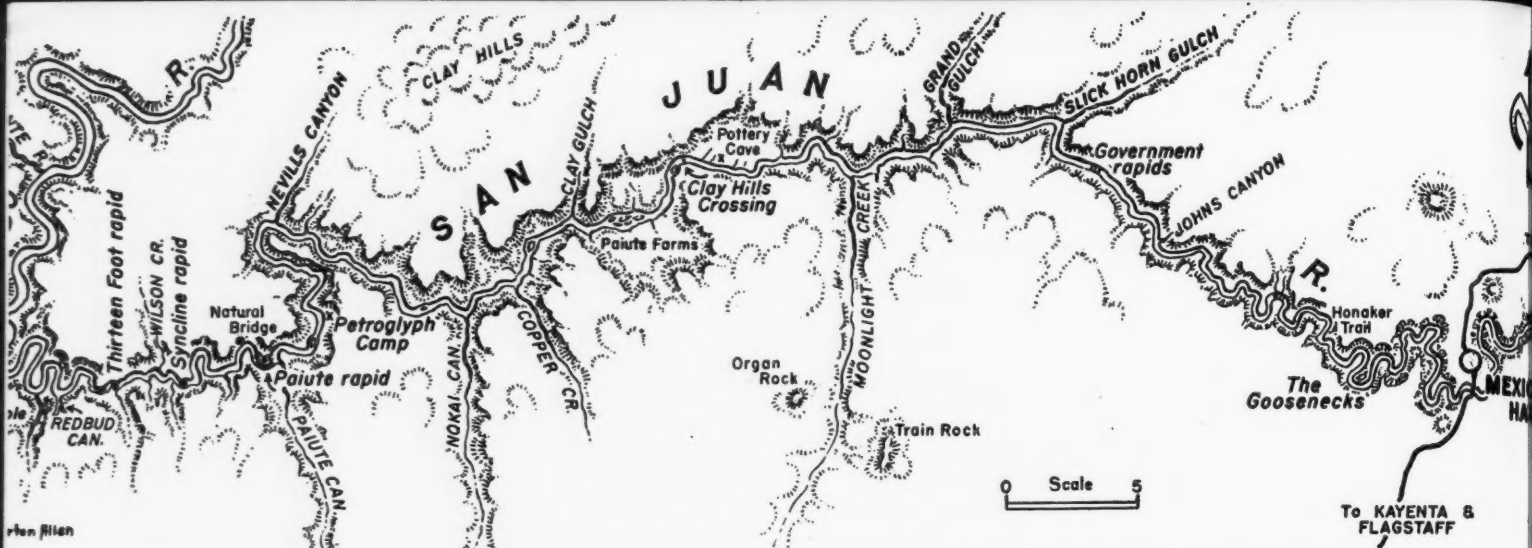
It seems that Norman has a mythical pal—a follower of the ancient Hindu philosophy of Yoga, and has installed him as sort of river god in the canyon country, to protect his boats and their human cargoes from the hazards of submerged rocks and rough water. Norman spins a long yarn about how the Yogi happened to desert his ancient home in India and adopt the desert of the Southwest as his new abode.

The Yogi must be a very potent guardian

for Norman has made one trip down the Green river, four through Grand Canyon, and 30-odd excursions from Mexican Hat to Lee's ferry without losing a passenger or boat.

During the afternoon we saw two pairs of bighorn sheep on the talus slopes at the foot of the limestone cliffs along the river. They raced ahead of the boats for some distance, leaping from rock to rock with an agility that is almost unbelievable. Gradually we gained, and when we overtook and passed them, they turned and raced in the opposite direction.

An hour before sundown the boatmen pulled into a backwater eddy at Slick Horn gulch, a side canyon with a trickle of sweet water and a delicious pool. We discovered we had a good cook in camp, in



Read from right to left to follow the route taken by the boat party from Mexican Hat on the San Juan river 113½ miles to the junction with the Colorado river.

the person of Wayne McConkie, and members of the party shared in the camp duties—gathering driftwood, peeling potatoes and washing dishes.

The campfire bull session was of the river, and Norman gave us some of the highlights of his experience. "Face your danger!" is his number one rule. Most of the time the boats ride with the stern downstream so the oarsman is looking ahead toward the submerged boulders along the shore where the current is strongest.

"You furnish the brains and let the river do the work," is another of Norman's favorites. "You've got to out-figure it." And that is the way Nevills and his rivermen operate. There is not much rowing. The current carries the boat along from six to ten miles an hour—and that is enough speed for such a trip. The skill in running the river is in keeping the boat always in the most effective currents, with an alert eye ahead for rocks and shoals and backeddies. Norman handles his boat with the skill of a fine violinist—a push, a pull, a drag of the right oar at the right moment—and the boat glides along with the maximum speed of the current, always just out of reach of the various kinds of booby-traps which Ol' Man River has set for the unwary.

It all sounds very simple. But those of

us who took a hand at the oars at later stages of the journey, discovered that it takes more than ordinary rowing skill to keep out of trouble. I finished my tour of duty as an oarsman with a perfect bathing average—I tried for three landings and missed all three of them.

The second day was Sunday, and Father Liebler invited us all to six o'clock mass in a pretty setting of limestone shelves and benches in the cove at the mouth of Slick Horn gulch. The padre had brought complete vestments for the service—a communion ritual, and in this natural chapel among the towering limestone walls it was most impressive.

We passed Grand Gulch where Byron Cummings and John Wetherill made important archeological discoveries many years ago. We landed for lunch in the shade of a thousand-foot wall with a convenient shelf just above the waterline near Clay Hills crossing. Wide side canyons at this point provide easy access to the river and it formerly was a well-known ford. Up to this time we had been riding between gray limestone embattlements that rose as high at 2,000 feet above the river. Below Clay Hills crossing we entered a region of broken ramparts of red Wingate and Navajo sandstone.

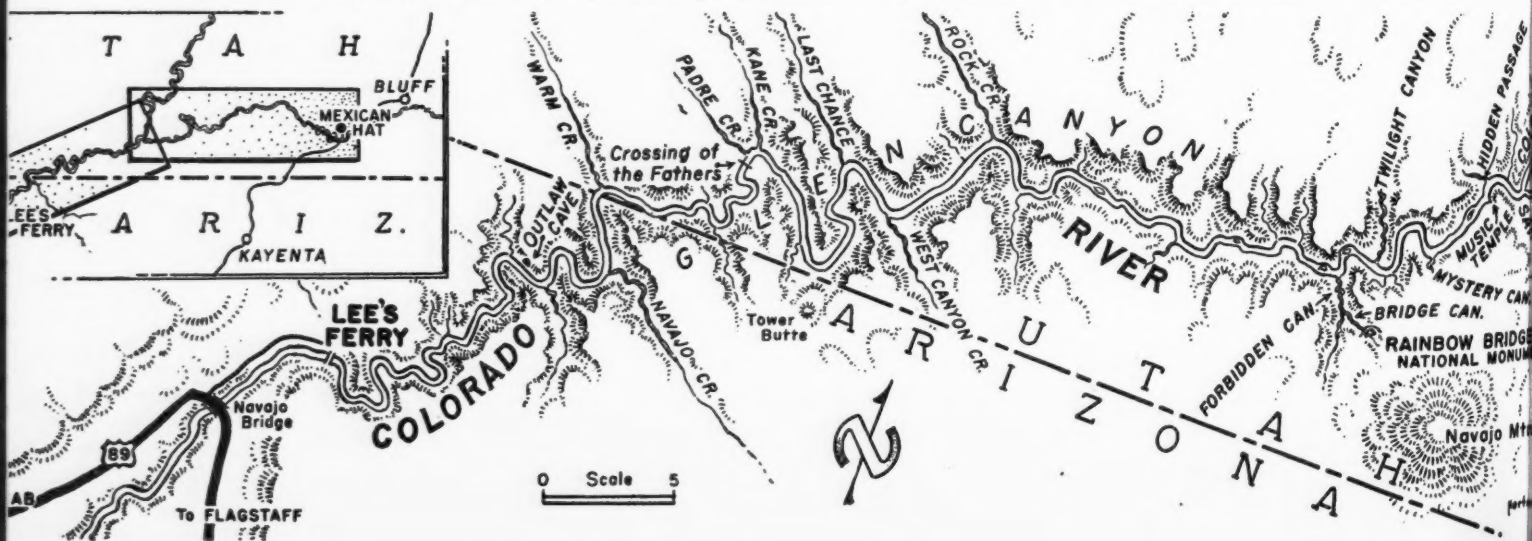
Soon after lunch we arrived at Paiute farms where the canyon widens out and

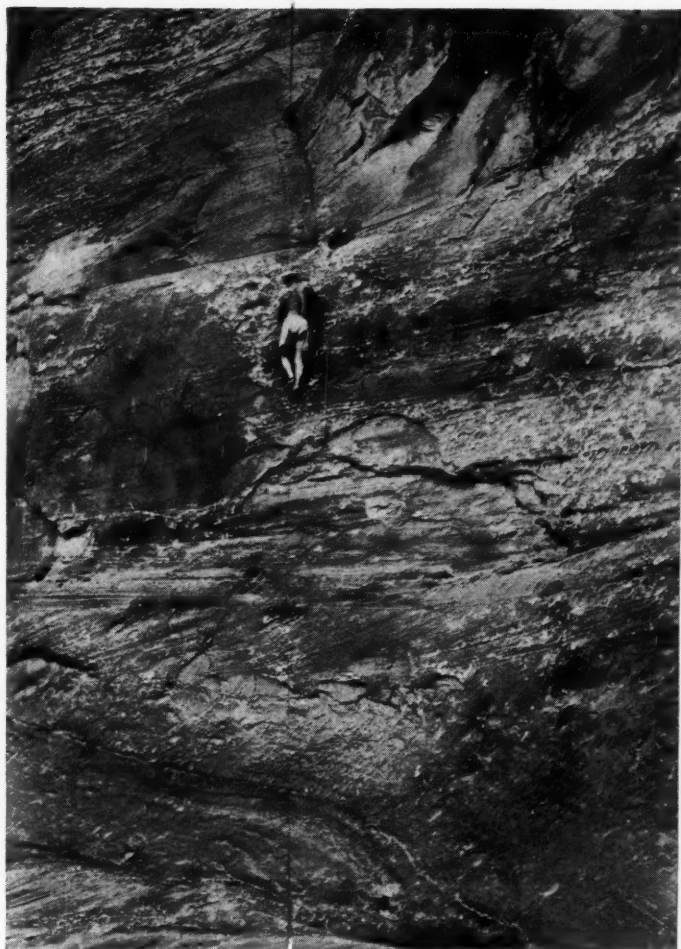
there is a valley where Indians once raised corn and squash and melons. For two miles the San Juan sprawls out as a series of sluggish channels between sandbar islands. There may be a deep water channel through those bars—but we couldn't find it. However, it was no hardship to go overboard in the cool stream and push. I've pushed my jalopy out of more stubborn sand than we found in the San Juan shoals.

Later in the afternoon we stopped at Nevills canyon, a tributary of the San Juan, to fill the canteens with cool clear water. Just before the sun went down we pulled inshore for night camp at Petroglyph rock. The glyphs are on a great block of stone that had fallen from the wall above, and predate any of the present Indian cultures.

Our dinner menu at Petroglyph camp, typical of the meals along the way, consisted of soup, fried ham, lima beans, mashed potatoes, canned figs and tea and coffee. The soup was delicious—but Wayne merely grinned when we asked him the brand. Later I learned how this strange soup concoction was made. The canned foods are all stored under the fore and aft decks in the bottom of the boat. By the end of the first day most of the labels had been washed off by the water that came over the side when we ran the sandwaves. The cook knows the soup cans by their size and shape—and that is all he knows about

Read from right to left to follow the route of the river party from the San Juan junction down the Colorado river to Lee's ferry.





Toe-holds cut in this sandstone wall by prehistoric Indians probably lead to cliff dwellings at the top—but the rock has decomposed and Nevills has not yet been able to go all the way up—hence the name, Mystery Canyon.



Frequent stops were made on the river trip to explore side canyons and climb the sandstone bluffs of the wild rugged "canyon country." This sandstone knob was climbed from Hidden Passage.

them. When it is time for dinner he simply starts opening soup cans. They may be noodle soup, or bean soup, or vegetable or tomato—and generally we got a mixture of all of them. It was always good soup.

The third day we ran the three worst rapids in the lower San Juan—Paiute, Syncline and Thirteen Foot. Norman had been preparing us for these rapids for two days, especially Thirteen Foot where the river falls that distance in a quarter of a mile. Actually, these rapids are not comparable to the treacherous cataracts of the Colorado—but listening to Norman, one would think we had only a 50-50 chance of getting the boats through. The boatmen held frequent huddles and discussed in awed tones the hazards of these roaring river demons.

I wondered at the time why the skipper wanted to put so much fear in the hearts of his passengers. Later I concluded it was good psychology. For this reason: All veteran boatmen on the Colorado agree that the greatest danger on the river comes from lack of vigilance on the part of the pilots. Constant alertness is essential. If the boatman ever lets down and underestimates the power of the river currents and eddies, he is in for trouble.

So, while Norman is building up re-

spect for the river on the part of his passengers, he is also fortifying himself and his crew against any tendency toward overconfidence. Perhaps that helps explain the fine record of the Nevills expeditions.

Nevills and McConkie ran the four boats through the Paiute and Thirteen Foot rapids, while a majority of the passengers scrambled over the rocks to a point where they could take pictures, and then rejoined the craft below. Norman takes no unnecessary chances with his passengers.

There is neither habitation nor landmark where the San Juan completes its journey and dumps its muddy waters into the Colorado. But it is a gorgeous spot—the river fringed with willow and tamarisk against high walls of red sandstone. This is an important junction in the river system of the Southwest, and yet the overlooking canyon walls are so inaccessible that few persons have come here except by boat. We had traveled 113½ miles on the San Juan.

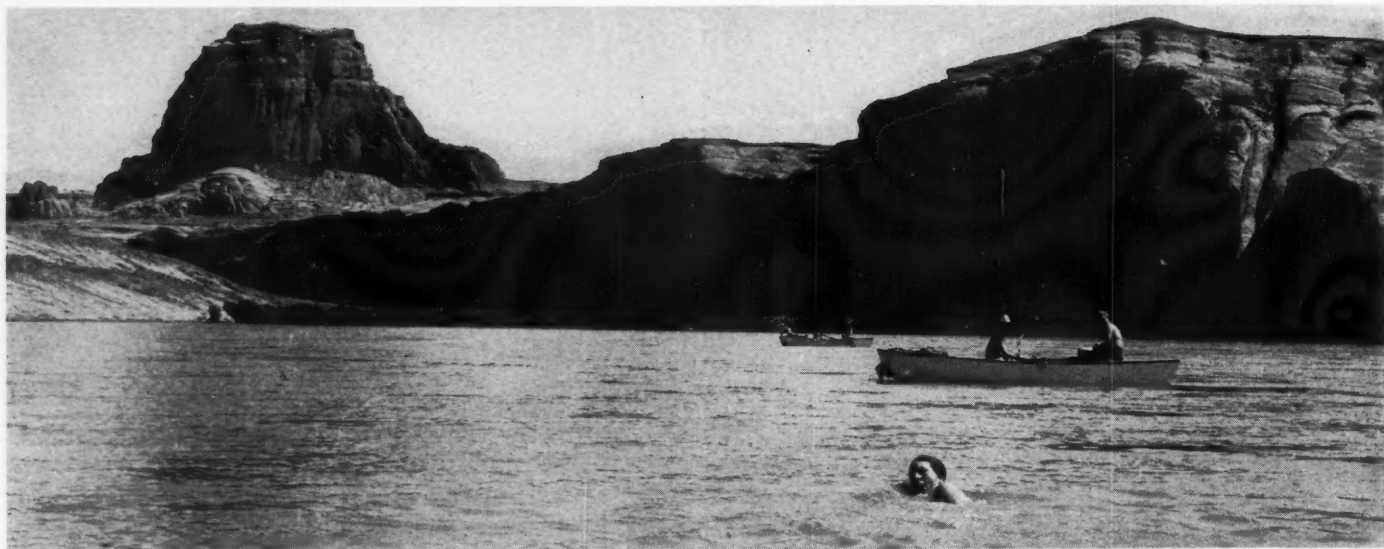
The Colorado in southern Utah roars through Cataract canyon in a tumultuous torrent—a tough treacherous river that holds the respect of every boatman who has dared its passage. Then, as if exhausted by the fury of its Cataract canyon tantrum, it flows along for 140 miles in placid serenity—and that is the Glen canyon sector.

Major John Wesley Powell gave the canyon its name in 1869 on the historic first expedition down the Colorado when he was impressed by the frequent picturesque coves and alcoves that occurred in the sandstone walls along the stream.

The San Juan enters the Colorado in upper Glen canyon—and we rode the quiet waters of Glen to Lee's ferry, a distance of 77½ miles. The Colorado was running at flood stage with 53,000 second feet when we reached it—a broad muddy stream, too deep at this stage for sandwaves and too sluggish to give the boatmen any serious problems of navigation.

We unrolled our sleeping bags that night on a series of broad sandstone shelves that formed steps to the river's edge. A delightful camp it was. A few hundred yards downstream was the entrance to Hidden Passage canyon, a tributary with a well-camouflaged entrance which Norman Nevills had named. Next morning we followed the narrow winding passageway a quarter mile to a waterfall, and then with the help of a rope scaled a high overhanging ledge for pictures.

This fourth day of our journey was devoted mainly to the exploration of side canyons. Leaving Hidden Passage we crossed the river and hiked a short distance



When the day is warm, the passengers and boatmen go overboard for a refreshing dip in the San Juan.

into Music Temple. Powell camped here August 1-2, 1869, and gave the canyon its name. He wrote in his notes:

"On entering we find a little grove of boxelder and cottonwood trees; and, turning to the right, we find ourselves in a vast chamber carved out of rock. At the upper end there is a clear deep pool of water bordered with verdure. The chamber is more than 200 feet high, 500 feet long and 200 feet wide. Through the ceiling and on through the rocks for a thousand feet above, there is a narrow winding skylight, and this is all carved out by a little stream which runs only during the showers that fall now and then in this arid country . . .

Here we bring our camp. When "Old Shady" (the cook) sings us a song at night, we are pleased to find that this hollow in the rock is filled with sweet sounds. It was doubtless made for an academy of music by its storm born architect; so we named it Music Temple."

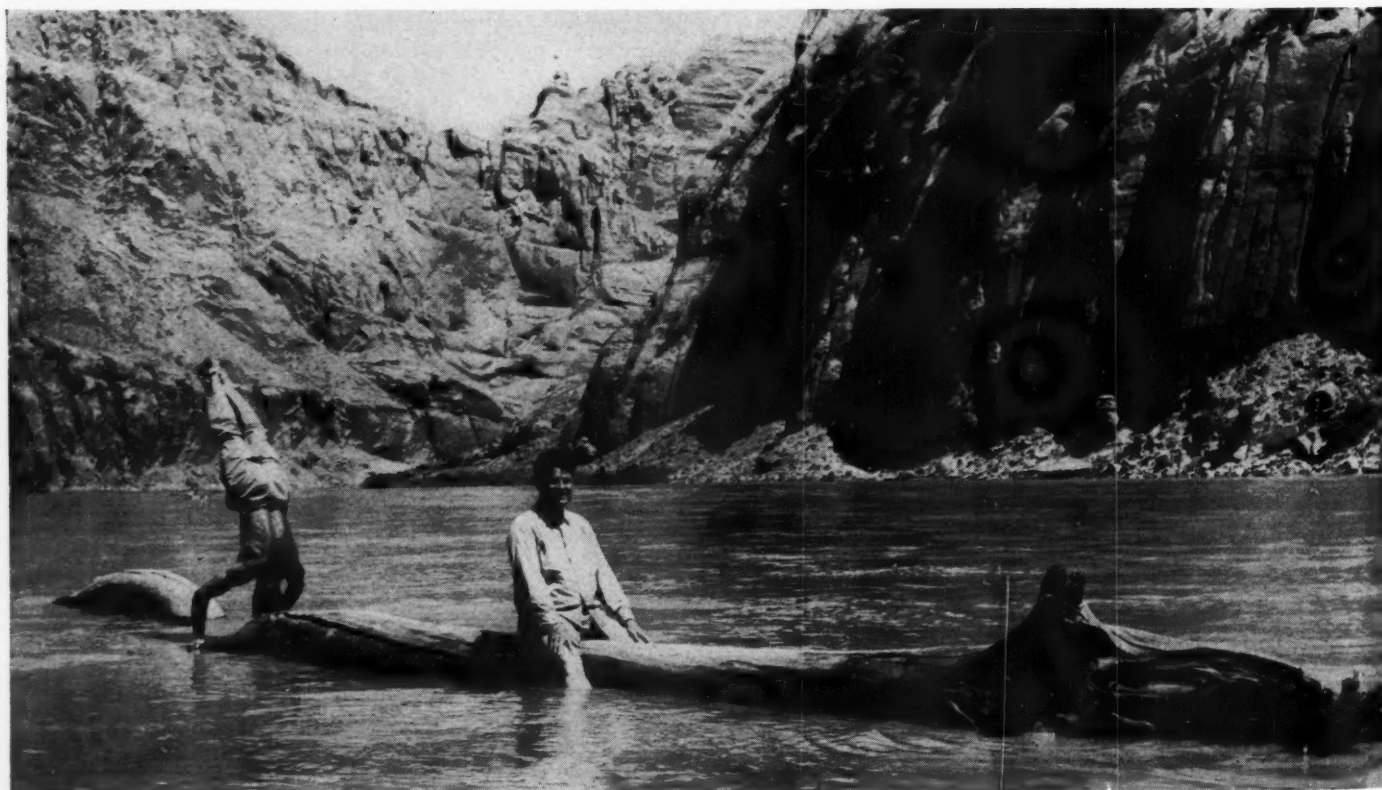
We found the name of Dunn of the first Powell expedition carved on the walls, and the names of E. S. Dellenbaugh, W. H. Powell, Hillers, Bishop and Steward of the 1871-72 expedition still plainly visible. There was a tin box here where more recent visitors have been depositing bits of paper with their names.

From Music Temple we dropped down-

stream two miles to Mystery canyon—another of Norman Nevills' pet canyons. At this high water stage we could enter the tributary by boat, following the narrow inlet in a great S-shaped passage deep in the vertical sidewalls. At one point a huge block of stone had fallen from above, forming a tunnel through which our boats passed. From the end of our waterway we hiked 300 yards to a great domed room somewhat after the pattern of Music Temple. Here was a clear deep pool in a luxurious garden of maidenhair ferns and columbines.

We ate our lunch amid the ferns while Norman told why he had chosen the name

There is never a dull moment on a Nevills trip. When the river flows smoothly and there are no rocks to worry about, Norman turns to clowning. The voyagers took turns riding this log in lower Glen canyon. Fellow-passenger is Francis Farquhar.





Father Harold Baxter Liebler on a bluff overlooking the Colorado where Father Escalante crossed the river in 1776—the "Crossing of the Fathers."

"Mystery" for this canyon. He had found old Indian steps cut in the sidewall not far from where our boats were moored. The steps were weathered and crumbling and the wall very steep, and although he had made several attempts he had not yet reached the top. Later when there is time he plans to return with tools to improve the old steps. He expects to find undiscovered cliff dwellings above. The mystery remains unsolved.

Two and one-half miles downstream from Mystery canyon is Twilight canyon. Indian petroglyphs mark the walls at the entrance. Here, water erosion through countless ages has carved a waterway of hairpin turns. At each turn the cloudburst torrent which comes down at long inter-

vals has undercut the sandstone and gouged out a great cave-like recess. The canyon is narrow and the walls very high, and the sun seldom penetrates to the bottom.

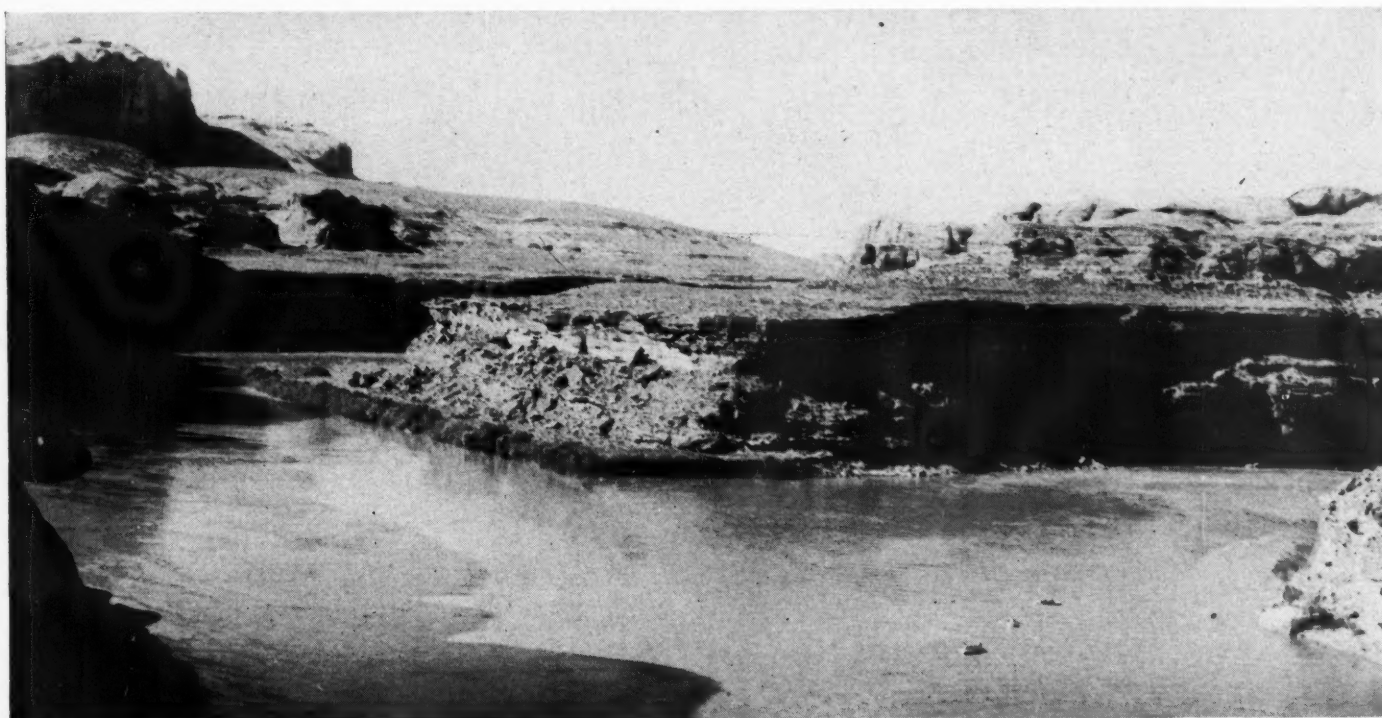
A mile below Twilight canyon we rowed into a narrow inlet that marks the entrance to Forbidden canyon. We had visited four side canyons today — Hidden Passage, Music Temple, Mystery and Twilight—and in a land of such gorgeous color and majestic form that is almost more scenery than a mere human can digest in one day. A river trip with Norman Nevills is more than a mere boatride. It is a flight on a magic carpet of adventure into a canyon wilderness of indescribable beauty and grandeur. One feels very humble at the end of such a day.

The high spot of our San Juan-Colorado journey was still to come. At the entrance to Forbidden canyon, we were at the river gateway to Rainbow Natural bridge. This was the end of the river trail to one of America's greatest natural wonders—the great arch of rock which John Wetherill and Byron Cummings first brought to the attention of the English-speaking world in 1909.

From the Colorado it is 4½ miles up Forbidden canyon to its junction with the Bridge canyon tributary, and another 1½ miles to the bridge.

We went swimming in the backwater of the inlet that evening, then cooked our dinner in a stone fireplace built in the ruins of an ancient cliff dwelling. Our

Where the San Juan (right) joins the Colorado. Few white travelers have ever reached this junction except by boat.



sleeping bags were spread on smooth sandstone shelves amid stone walls that had been erected in this well-protected cove by the aborigines of an unknown past.

The 12-mile round trip to the bridge next day was along the floor of a canyon where a clear-water stream zigged and zagged from one side to the other, making many crossings necessary. A very good trail follows close to the canyon walls, but much of the time we preferred to follow the rocky course of the stream below. The grade is easy, and there are always rocks or willows or redbud trees for shade when it is time to rest.

At the junction of Forbidden and Bridge canyons Emory Kolb carved his name many years ago, and incised an arrow indicating the route to the bridge. There are deep clear pools at the entrance to Bridge canyon, and while some of the hikers took a refreshing dip in the water, others relaxed on the rocks and discussed the old-time rivermen who had contributed to the early exploration of the Colorado—the Powells, Dellenbaugh, the Kolbs, Galloway—and the later adventures of Buzz Holstrom and Clyde Eddy and his crew of schoolboy oarsmen. The rivermen of today have a high respect for the audacity and skill of Major Powell—but they find it hard to forgive him for riding the river in a chair perched on the deck of his boat. That strange procedure just doesn't make sense to a river rat today.

At the National monument register beneath the arch of Rainbow bridge the 13

members of our party registered as Nos. 3945 to 3957. I checked back in the big book which contains the names of many distinguished men and women, and found that 621 visitors had registered there since I last signed the book April 8, 1941, as a member of the Sierra club's pack trip from Rainbow lodge on that date.

We ate lunch by a spring beneath the bridge, and then Marjorie Farquhar, Weldon Heald and I climbed the sidewalls to reach the top of the bridge while the photographers waited below to take pictures of the climb.

Next day — our sixth day out — we landed at the mouth of Kane creek and hiked over sandstone bluffs to the point where Father Silvestre Velez de Escalante and his exploring padres cut steps in the rock to get their animals down the bluffs for a crossing in 1776. The steps, still well preserved, are about a mile up Padre creek from the Colorado—but it is not practicable to approach them by that route today because of quicksand at the mouth of the creek. Father Liebler was especially interested in this side-trip and accompanied the photographers to the historic spot for a silent tribute to the courage of those sturdy churchmen of 169 years ago. A plaque on the sidewall just above the waterline at Padre creek marks the "Crossing of the Fathers."

Continuing downstream we passed the mouth of Warm creek which marks the Utah-Arizona state line. Here Norman Nevills and Barry Goldwater in 1940

painted a marker on the sidewall, and with characteristic chamber of commerce zeal, Barry added "Arizona Welcomes You."

Our last night's camp was at Outlaw cave, a great arched recess in the canyon wall, separated from the river by a grass-grown bench where we spread our bedrolls. Norman gave the cave its name when he learned that Neal Johnson, hiding from officers for alleged horse-thievery, had lived here for several months. Later Johnson was hanged in Nevada.

There remained only a 17½-mile run on comparatively smooth water for the last lap to Lee's ferry. Norman never allows his trips to become monotonous or his guests bored, and with nothing more exciting on the program this last day, he spied a huge log of driftwood balanced high on a rock along the river, and decided that some of us should have a log-ride on the Colorado.

With much pushing and pulling and puffing we pried the log loose from its perch. Riding a log on the Colorado proved good sport—until just above Lee's ferry the log hung up on a submerged rock, and its occupants had to be rescued by a boat.

And thus ends the saga of a desert land-lubber on the river trail to Rainbow bridge. If it is my destiny eventually to arrive at the River Styx for safe passage to the region beyond—I'll not complain of this fate if Norman Nevills and the Yogi are there to handle the boat.

Camp at the entrance to Forbidden canyon. Note the masonry walls of prehistoric cliff dwellers. This camp is on a still-water inlet. From here the party hiked six miles up Forbidden and Bridge canyons to Rainbow Natural bridge.



Summertime on Ghost Mountain is a period during which the South children come into even closer and more constant contact with animate life. Marshal, in this month's article, relates some of their discoveries about their animal friends—and about a tragedy which befell a "younger brother."

Desert Refuge

By MARSHAL SOUTH

THE CARPENTER BEE, who lives somewhere in the headrail of our outdoor bed, is an early riser. When the first streaks of dawn begin to whiten the rocky ridges to the eastward we hear him begin to stir. The bed headrail, which is fashioned from dry mesquite poles, has a neat round hole near one end, which is our little friend's doorway. From this he has run his tunnels far back along the soft pith of the pole's interior. How, in his dark retreat, he knows when it is dawn, we cannot guess. But know he does. Regularly each morning, at the same time, we hear him stir and begin to come down the long length of his hidden passage, uttering querulous complaint at every step, much like some grouchy rheumatic old farmer, stirred from a warm bed on a cold winter's morning, to go down to the barn and feed the stock.

This is the time of the year when the fierce arrows of summer sun beat upon the iron roof of Yaquitepec. Ghost Mountain is hot, and the children scan the horizon anxiously for any thunderclouds that may hold the promise of rain. Towering and weird are these mighty water-bearers of the sky, with the hot brassy rays of the sun reflecting blindingly from their mighty battlements and casting caverns of awesome shadow in their titan clefts and canyons. Squatting in the shade Rudyard and Victoria were watching a particularly imposing thunderhead. "It may come here," Rudyard suggested. "It is very near."

Victoria wrinkled her nose, as she squinted, desert fashion against the sun-glare: "I don't fink so," she said pessimistically. "It may be near. But I fink it is altogether near too far." Which proved later to be excellent judgment, despite the fact that Victoria is as fond as a lawyer of making her remarks complicated.

Yes, we wish it would rain. But there is health in heat and in sunshine, notwithstanding the discomfort which is inseparable from desert midsummer. The dry heat of the desert is charged with benefit for the human body. Humanity gets far too little of the sun—that is, civilized humanity. The unspoiled savage was, and is, different. But civilized man has turned his face to the darkness, in more ways than one. You may read articles and listen to discourses which seek to prove that sunlight should be taken in cautious doses, that too much of it is a positive danger. All of which sounds very official. But the exponents of these theories make a very poor showing in actual health. About ninety per cent of the people I know are afraid of the sun, afraid to expose their skins to it, saying that they will burn. Which they do. But most of them are sick in some way or another.

Rider, whose mathematical mind runs to investigation, lately has been bitten by the "perpetual motion" bug. He frequently is to be observed, these hot days, sitting at the bench under the ramada deeply absorbed in some device whose underlying purpose is to produce continual and costless power. The latest is a steel ball designed to run around a circular tilting trackway, the momentum of the ball to produce power by the constant, alternating up and down movement of the track. So far this device has not been any more successful than its predecessors.



Marshal South, with Yaquitepec and ramada in background. Little bird house, of Flycatcher-snake adventure, may be seen on summit of juniper tree at extreme left. Photo NOT taken in summertime.

But Rider is not discouraged. And though the scoffers have been poking fun at "perpetual motion"—just as they did at the idea of the airplane—there is not much basis for their jibes. Perpetual motion—so far as human existence is concerned—is everywhere in the universe around us. It remains only to harness some of these perpetual powers.

But summer, notwithstanding sunshine and health and the opportunities for invention, also has its tragedies. The other day Rudyard, scouting around in a park of bottles and containers (in which, when it rains Rider stores a supply of water for his own projects) discovered one bottle that was uncorked. The stopper had somehow fallen out and the bottle, an ordinary quart vinegar bottle, had lost about half of its contents by evaporation. A mass of grey feathers and an almost unrecognizable drowned shape floated in the remaining water which the bottle contained. Upon breaking the bottle we discovered that the remains were those of a little canyon wren. Though how it had managed to come there we could not imagine. Canyon wrens are small bodied, but the neck of a vinegar bottle is even smaller. That the bird could have forced itself through so tiny an opening seemed impossible, especially as the bottle had been standing in an upright position. The only explanation seemed to lie in the possibility that the feathered mite, in its inquisitive prowls, had spied the uncorked bottle and, possibly intrigued by the dead flies—of which there were several floating in the water, had forced itself head first down through the bottle neck. Once inside its doom was sealed. For not only did it fall into the water, but the perpendicular smooth sides of the glass, sloping in to a dome over its head, gave it no hope of foothold for climbing. It must have perished miserably.

Old Mojave, the latest addition to our Yaquitepec tortoise herd, has begun to change his snoozing place. The sun has moved—and so has the shadow which, up to now, he has

enjoyed. So he is plodding off to find another cool spot. Desert tortoises ordinarily dig themselves deep burrows under bushes or rocks. But the conditions at Yaquitepec don't admit of any satisfactory efforts in that line. So we have to provide artificial shelter. Mojave, however, is a distinct character in his own right. He likes to rove around and to suit himself. He is very domestic. And nothing pleases him so much as to prowl about the house where, at night, he has his own special sleeping box. In daytime however he snoozes in the shade outside. Or, if it gets too hot, returns to the house where he has a retreat deep under a cupboard or type case. Early morning and late evenings is tortoise time. It is then that these strange and queerly lovable desert creatures like to roam and feed.

It was said by one of the ancient philosophers that "The proper study of mankind is man." But I think that this advice should be amplified to include the whole of animate creation. For certainly man may learn a great deal by intelligently studying his "younger brothers" of fur and feather and all their many classes of relatives. Not studying them in the sense of knowing their Latin names, or their exact measurements. But by seeing the world—their world—as far as possible, through their eyes. In this way much may be learned of their "human" reactions to various situations. Also the varying degrees of intelligence possessed by not only different classes of creatures, but by different individuals of the same class. Study of this sort will do much to rid man of the exalted mythology of greatness which he has woven about himself. The Indian, before his liberties and his soul were destroyed by his ignorant white conquerors, knew much of this lore. To him the creatures of the desert and of the forests were not just "animals." They were younger brothers, about whom a vast store of knowledge and understanding were accumulated. Something that today is thrust aside by those who stampede along in the mad scramble for the baubles of "civilization." The Indian knew better. But then the Indian was part of the natural picture. And he had the advantage of being unhampered by books. Books are all very well in their place. But they are a menace if overdone.

But the Book of Nature—the same one that the Indian studied so successfully—still is available free to all. And the Desert Edition of it, whose pages we on Ghost Mountain ruffle through every day by the aid of wind and sunshine, always provides interesting items and food for thought.

There was, for instance, the chapter written by our pair of flycatchers and the brown racer snake. A chapter of tragedy. But one nevertheless which contained many side lights on bird and snake intelligence.

This pair of flycatchers nested very late this year. They were a long time deciding on their nest box. Also they took their time about building. Finally the job was complete and the eggs laid. The female took up the task of hatching them. A few hot days passed. Frequently in the afternoons she would come and sit in the nest box opening, cooling off.

It was on one of these hot afternoons that a wild outcry arose from the children. Rider had seen a long "something" hanging out of the nest box—a shape at which the frantic bird, hovering near the entrance, was wildly pecking. "There's something in the flycatcher house" was the wild shout that brought Tanya and me running.

It was the young brown racer snake who has spent all his life around Yaquitepec. He is now about 30 inches long and full of misguided humor. His lithe tail hung out of the nest box, which is situated in the summit of a gnarled juniper tree. And as I came rushing up and grabbed him, he withdrew a startled head and a mouth full of nest feathers. He looked innocently astonished.

The poor flycatcher was swooping and fluttering around in frantic terror. So tumbling his snakeship unceremoniously on his head among the branches—from which he hastily scooted—I wrenched open the nest box door and felt in the deep little nest

pocket. There were still two eggs left. We secured the door of the box again and went quickly away to give the terrified bird a chance to return. The snake, we felt, having had some ungentle handling and a scare, would not be likely to return.

It took the flycatcher a long time to calm herself. We would have worried about the eggs chilling had it not been such warm weather. She hovered around and around the nest and peered at it from vantage points on the branches for so long that we grew tired of watching and went about our work. And then we heard again a frantic twittering and crying. And again we dashed out.

It was the snake again. He hung half out of the box as before. This time I was really angry. Without ceremony I yanked him forth and sent him whirling out over the mescals and rubber bushes. I distinctly remember how stiffly he went round and round in the air. Just like a stiff stick. And, luckily for him, he landed in a springy rubberbush a considerable distance away. Rider, racing to the spot, advised that he was making off across country at top speed.

He had managed to get another egg. That left a solitary one. We decided to move the nest box. We sawed it from its wooden pole support and remounted it atop a long length of steel pipe, which we set up in a crack of some great boulders some ten feet from its original treetop site. We feared that this was the end of the flycatchers' homemaking. It didn't seem possible that they would ever come back after this. And they didn't.

But the snake did. Incredible as it may seem that slim brown piece of rascality came back for the third time, looking for the last egg. Shortly after we had finished the job of establishing the nest box upon its steel pole I discovered him sprawled out along the branches in the juniper tree. He was looking at the severed end of the nest box pole in a puzzled sort of way. He conveyed the impression of one who, having imbibed too freely, is "seeing things"—or, in this case, *not* seeing them.

I shook my finger at him and gave him a wrathful lecture. But you can't get really angry with a racer snake. They are so full of humor. He just looked at me with his peculiarly expressive eyes. He seemed to wink. Then he slid swiftly away.

"Why didn't you kill him?" a friend asked us later. He couldn't understand why we hadn't swatted the robber. But things aren't managed that way at Yaquitepec. We do not shed the blood of our brothers—it is only the ignorant who resort to killing as a solution to problems. Gaining thereby not a solution but an intensification of the trouble. The command "Thou shalt not kill" is a very real plank of our religion. There was a time once on Ghost mountain, when—through ignorance and a fear for what baby footsteps might blunder into—we backslid on our convictions as far as rattlesnakes were concerned. But we have repented of our failure and our error. And the rattlers now rest, with all our other brothers, under the seal of peace. For we have seen what this upsetting of the balance of nature does, even in the short period when we were guilty of it. For the squirrels and the packrats of Yaquitepec have increased alarmingly. And the native vegetation suffers. He who is wise will leave the balance alone.

SECURITY

Where lies Security?

*Oh soul, not in the marts of men,
Nor in the cities, where the stain
From greed and selfishness is gross.
Mere living holds no power of loss
Nor gain within itself. Oh soul,
Only WITHIN may Truth unroll.
Only WITHIN may you conceive
The good in which you would believe.
And from WITHIN, whoe'er you be,
You may attain Security.*

—Tanya South

HERE AND THERE... on the Desert

ARIZONA

Desert Road to Deep-Sea Fishing . . .

YUMA—By next year Yuma will be less than 85 miles by paved road from deep-sea fishing in Gulf of California. Construction of toll road from San Luis, on the border 26 miles south of here, was to be started in July and finished by January 1, and will extend to Puerto Isabel and El Golfo. Enterprise is being backed by syndicate of Mexico City bankers. According to rumors a resort hotel will be built at El Golfo.

Arizona is Ranch Background For "Leave Her to Heaven" . . .

FLAGSTAFF—Ranch scenes for 20th Century-Fox technicolor picture *Leave Her to Heaven*, starring Gene Tierney, Jeanne Crain and Cornel Wilde, were shot at Sedona during July. Over 100 members of the company came to Arizona for the filming of Ben Ames Williams' bestseller. "Back of the Moon" lake scenes already had been completed at Bass Lake, at entrance to Yosemite national park and Bar Harbor, Maine, scenes were filmed at Monterey and Carmel, California.

First Arizona Indian GI Home . . .

WINSLOW—Sgt. Guy Suetopka, first Arizona Indian to be drafted, now can compete with oldtime Hopi chiefs telling stories of warfare as he relates his experiences with 158th Infantry in Pacific. His "greetings" from the president arrived on Christmas Day, 1940 and now his 112 points have won an honorable discharge. Although he had been taught silversmithing at Phoenix Indian school, he intends to train as a machine mechanic under GI bill of rights. Sergeant Suetopka has the Combat Infantryman badge, American Defense, Good Conduct, American Theater of War, Asiatic-Pacific and Philippine Liberation ribbons. He also has four bronze stars and the Bronze Arrowhead for participation in an initial assault landing. He has two brothers in armed forces, Neilson in Germany and Vinton in Philippines. His family lives in Winslow.

Pioneer Woman Prospector Dies . . .

DOUGLAS—Funeral services were held July 6 for Mrs. Grace Fisher Cornwall, 83, one of Arizona's few women prospectors. A pianist of note, she came to this state about 1900 from Pennsylvania, for a time entertaining at Tombstone's Birdcage theater and later teaching music at Bisbee. She began prospecting around Jerome about 1904 and located claims which became part of the rich Verde Extension. Later she prospected in the Klondike and Yukon. She returned to Arizona in 1911 and settled in Douglas.

Arizona Date Growers Organize . . .

CHANDLER—Another step in development of American date industry is marked by formation of Arizona Cooperative Date Producers association, a group who will operate a modern packing house here. They announce they have nearly 500,000 pounds of dates signed up for processing during coming season, an amount comprising approximately 25 per cent of Salt River valley's date production. Bert Noll of Chandler is president of the association; Art Beck of Tempe, vice-president; Harry Palmer of Mesa, secretary-treasurer.

Allotment of \$1,352,550 for improvement of US Highway 66 has been announced by Arizona highway commission as part of plan to make two super-highways crossing state east and west.

Improvements involving total expenditure of \$50,000 were under way this summer at Ganado Mission and Sage Memorial hospital at Ganado, Dr. C. G. Salsbury, superintendent, announced in July.

CALIFORNIA

29 Palms Postoffice Receipts Soar . . .

TWENTYNINE PALMS—Local postal receipts for first half of 1945 reflected 153 per cent increase in business, according to Postmaster Ben Steeg. Receipts totaled \$14,274.53, just \$563.06 less than the entire year of 1944 which had been greatest year in history of the local office. Postoffice was established in 1928.

Electric Generating Sets

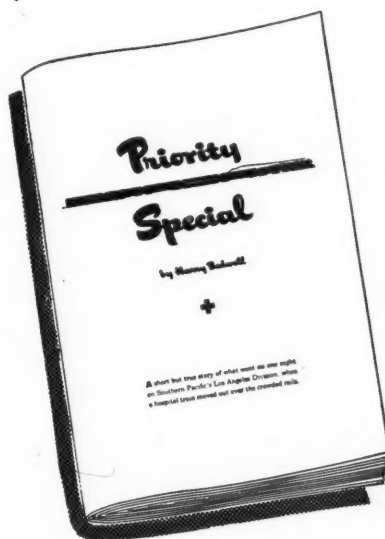
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We will be glad to help you estimate your light and power costs.

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A night of drama, during which S.P.'s crowded Los Angeles Division concentrates on cushioning the ride of three seriously wounded soldiers, brings them home safe. A true account by Harry Bedwell, S.P. operator and noted writer of railroad stories for national magazines.

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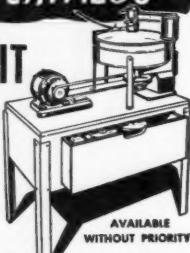
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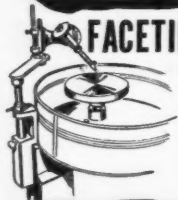
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- SAWING • POLISHING
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- THE LATEST in lapidary equipment, with many exclusive features found in no other machines. More than 1000 in use. Standard Unit, \$88.00 f.o.b. factory (less motor and stand). Price includes diamond saw, grinding wheels, sanding wheels, polishing buff and everything necessary to make cabochons and specimens up to capacity of the 8" saw. Saws up to 10" can be used on this machine.



AVAILABLE
WITHOUT PRIORITY



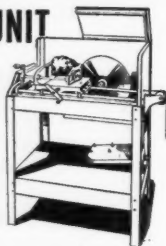
FACETING ATTACHMENT

- A FINE precision tool that greatly simplifies the cutting of any faceted gem. Can be used with any horizontal lap thru the use of a simple adaptor socket. \$28 f.o.b. factory. Adaptor socket, \$1.50. No priority.

New Model 7-16V

DIAMOND SAW UNIT

- HANDLES from a 10" to 16" blade. Safe clamp hold quickly adjusted to any size stone. Cross feed permits several parallel cuts without reclamping stone. Internal Pressure grease lubrication . . . adjustable oil sump. Splash proof, yet work is visible at all times. \$74.00 f.o.b. factory less blade and motor.



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SEATTLE 1, WASH.

Chicago Firm Buys Gypsum Plant . . .

EL CENTRO — Announcement was made July 31 of purchase of Portland Cement company's \$2,000,000 gypsum plant at Plaster City west of here by United States Gypsum company, Chicago. Already operating largest quarry in U.S., 26 miles north of Plaster City in Fish Creek range, new owners plan rapid expansion. Plant produces wall and casting plasters, agricultural gypsum, crushed gypsum rock.

Fall Rodeo for Mojave Desert . . .

BARSTOW — Mojave desert people will converge on Rancho Oro Verde October 6 and 7 for a fall rodeo, arranged by Don and Pancho Shalito, according to announcement June 28. Construction plans for the event included bleacher seats, parking space, public address system, erection of more cottages and sleeping quarters, a restaurant and quarters for contestants and their stock.

The Desert Trading Post

Classified advertising in this section costs five cents a word, \$1.00 minimum per issue—
Actually about one-half cent per thousand readers.

MISCELLANEOUS

WANTED: Engraver to do Silver work. Also to stamp dies of different designs. Looking for Mexican Opals and rings. Silverstate Gems, 1119 Wheeler, Reno, Nev.

BEAUTIFUL KENTUCKY FOSSILS. Franklin County. Add these to your collection. 12 nice 4x4 assorted specimens \$7.00 and worth it. Extra nice \$3.50 each, 3 different \$7.00. Fine fossil curios 3 kinds \$3.50. Columnarias (about 4x6) \$3.50. 25 Rhynchotremas and Platystrophias \$2.00. Unbroken geodes 10 lbs. \$4.75. Postage paid. George Bryant, Rt. 2, Lawrenceburg, Ky.

BRAND NEW GUNS available for immediate delivery in trade for your used Rifles, Shotguns, Handguns, Reels, Rods, Outboards, Cameras and other sports equipment. Save money by dealing with America's Biggest Traders who offer maximum Trade Allowances for your merchandise as full or part payment for new guns. Ship your merchandise for appraisal, or write full description today. We also pay spot cash for equipment. Send 25c (refunded with first order) for Fall "Guaranteed Bargain Catalog" featuring new and used guns and other "Hard-To-Find" items. Klein's Sporting Goods (Sixty Years Fair Trading), Key South Halsted, Chicago 7.

INDIAN MOCCASINS: White, beaded, fur trimmed, baby sizes 1 to 6, postpaid \$2.15. Brown, beaded, childrens sizes 4 to 12, postpaid \$2.15. Brown, beaded, ladies and youths' sizes 4 to 7, postpaid, \$3.15. Books: Death Valley, American Guide series, illustrated, postpaid, \$1.15. Death Valley and Scotty, by Clarence P. Milligan, postpaid, \$2.65. A. Reid, Panamint Springs, Calif.

NAVAJO character dolls. Copper bracelets and silver jewelry. All genuine Indian hand made. All Indian arts and crafts. Wholesale only. Paint Pony Trading Post, Box 177D, Showlow, Arizona.

WANTED: FOR CASH OR TRADE. Wholesale Lots: Identified igneous rocks, crystals, fluorecents, cutting materials, critical and strategic minerals. Send lists for offer. D. M. McCampbell, Calexico, California.

CACTUS CATALOG — 20 big pages — 65 ILLUSTRATIONS. Cultural Guide. How to graft and insect control. 25c coin or stamps. Fitzpatrick's Cactus Gardens, Rt. 3X, Edinburg, Texas.

YOUR INNERMOST LONGINGS FULFILLED! Get "Spiritual Help For Your Everyday Problems" — 25c. Booklists included. OUTSTANDING BOOK ASSOCIATION, Box 2501, Los Angeles.

ANTIQUES and Desert Oddities. Desert Tea in natural form, large bundle \$1.00. Grail Fuller Ranch (Center of the Mojave), Daggett, Calif.

ARIZONA HIGHWAYS, Deserts, National Geographics, other magazines, bought, sold, traded. John Wesley Davis, 1611 1/2 Donaldson St., Los Angeles 26, Calif.

GOLD PANNING for profit, healthy, fascinating, outdoor occupation. Beginners' big instruction book, blueprints, photograph — \$1.00. Desert Jim, 208 Delmar, Vallejo, Calif.

PETRIFIED PALM rock specimens and nearly every kind of cut stones both precious and semi-precious. Still have good selection of Reservation hand-hammered silver, Navajo rugs, old Indian baskets that are worthwhile and other artifacts. We do not have a catalog. Daniels Indian Trading Post, 441 W. Foothill Blvd., Fontana, California.

LIVESTOCK

KARAKULS. Producers of Persian Lamb fur are easy to raise and adapted to the desert which is their native home. For further information write Addis Kelley, 4637 E. 52 Place, Maywood, California.

We sell Nationally Recognized Fur Producing Karakuls. Have permanent market for wool and furs. Attractive investment for rancher or city investor. James Yoakam, National Distributor, 1128 No. Hill Ave., Pasadena, California.

REAL ESTATE

WILL SELL: All equipment including house, mill trucks, machinery, etc., to operate a going business. Agents or jobbers wanted for Mojave Desert Tea, wholesale only. Rancho Del Remolino, Amboy, Calif.

FOR SALE or Trade. In Whispering Pines, Julian, Calif., home, 2 rentals. Highway frontage, water, phone, electricity. Owner Harry Steele, Box 238, Julian, Calif. Phone 26-J.

FOR SALE: Gem Village property. Improved. 18x22 building. Write to Chris Bilder, 1943 West Second Avenue, Durango, Colo.

WANT ACREAGE: Lots, mine leases, tax land, on or near Big Sur, Monterey. A. L. Murphy, Trona, Calif.

For Imperial Valley Farms—

W. E. HANCOCK

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EL CENTRO — — — CALIFORNIA

THE DESERT MAGAZINE

Santa Fe Donates Railroad Bridge . . .

NEEDLES—Funds for converting Red Rock railroad bridge near here for highway use were allocated July 19 by state highway commission at Sacramento. Santa Fe railway, which built a new bridge across the Colorado river, decided to donate the old bridge on state route 58 to the state rather than tear it down, said E. Q. Sullivan, district highway engineer. Conversion plans include a concrete deck for bridge and improvement of highway approaches. California and Arizona will share expenses.

NEVADA

River Adventure is Experiment to Aid Grand Canyon Voyagers . . .

BOULDER CITY—With nothing to keep them afloat except Mae West life-preservers, Harry Aleson and Georgie White completed a 42-mile trip down the Colorado river in lower Grand Canyon in July. They hiked to the river from Peach Springs and each carried a 30-pound pack of food and equipment in watertight cans. The trip required four days, and ended at upper Lake Mead. The swift current made it difficult to reach shore at times, and they spent eight hours in the water one day. Greatest discomfort was the cold water, most serious hazard was whirlpools where they often were pulled under. Aleson said they made the trip to prove that voyagers stranded in the canyon could get out without climbing the almost perpendicular walls.

First Nevada Newspaperwoman Dies

CARSON CITY — Mrs. Nellie Davis, first Nevada newspaperwoman and widow of two early-day newspapermen, died here June 23. She had celebrated her 100th birthday September 11, 1944. In 1866 she married Henry Rust Mighels, Sr., who after being honorably discharged from the Union army in 1865 had become first editor of the Carson City Daily Appeal, and shortly after, its owner. She was one of the three women who witnessed the Corbett-Fitzsimmons bout in pioneer Carson City, covering it as a reporter. Her story, which appeared in a Chicago newspaper, caused a furor among feminists who were shocked over a woman attending a prize fight. She covered Nevada legislature sessions in 1877 and 1879. Upon her husband's death in 1879 she carried on as editor of the Appeal. Later she married Samuel Post Davis, once a reporter on the Virginia City Chronicle, later to become famous as a short story writer, humorist, orator and politician. He died in 1918. Throughout the years Mrs. Davis continued her interest in newspapers.

Nevada is assured of at least \$160,000 revenue annually from the new one per cent tax on gross business of gambling houses, according to Robbins Cahill, chief statistician of tax commission.

NEW MEXICO

This POW Wants to Travel . . .

GALLUP—His letter didn't tell how he planned to get to Gallup for the 24th Inter-Tribal Indian Ceremonial August 17-19, but he likely was going to try. M. L. Woodard, Ceremonial association secretary, received a letter from a German prisoner of war near Alamogordo asking for literature on the ceremonial. Woodard said he would send the material requested, remarking, "This fellow apparently believes that 'four walls do not a prison make'."

Taos Author to Sell Hacienda . . .

TAOS—Mabel Dodge Luhan, author of *Edge of Taos Desert*, *Lorenzo in Taos*, *Winter in Taos* and many other books, has moved to a seven room house on her property and offered for sale for \$100,000 her 30 room Taos hacienda in effort to lead a simpler life. The former Buffalo, New York, woman who married Tony Luhan, Taos Indian, for years has headed Taos art colony.

Junior livestock show will be held September 9-11 at state fairgrounds, Albuquerque, it was announced by New Mexico Cattle Growers' association.

A WESTERN THRILL

"Courage," a remarkable oil painting 20x60 feet, the Covered Wagon Train crossing the desert in '68. Over a year in painting. On display (free) at Knott's Berry Place where the Boysenberry was introduced to the world and famous for fried chicken dinners with luscious Boysenberry pie.

You'll want (1) A 4-color picture of this huge painting suitable for framing. (2) A 36-page handsomely illustrated souvenir, pictures and original drawings, of Ghost Town Village and story of this roadside stand which grew to a \$600,000 annual business. (3) One year's subscription (6 numbers) to our illustrated bi-monthly magazine of the West. True tales of the days of gold, achievements of westerners today and courageous thoughts for days to come. Mention this paper and enclose one dollar for all three and get authentic western facts. Postpaid.

GHOST TOWN NEWS
BUENA PARK, CALIF.



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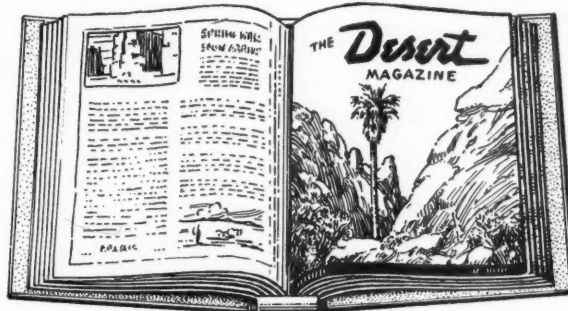
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THE *Desert* MAGAZINE
El Centro, California

BOILED OIL



Was a time when city kids thought milk came from bottles that sprang up over night on the front porch. Early education was limited pretty much to the 3 R's. Youngsters learned few miracles of science—except maybe that now and then a cow jumped over the moon.



But it's different today. Schools teach all about interesting things that effect everyday life.

For instance, there's that versatile substance called petroleum (*petro* a rock, *oleum* oil).

Scholars learn that rock oil, from miles down deep in the earth, can be boiled to make motor fuel and more than a thousand other useful things.



However, lest the quizzical kids try to augment the family gasoline ration by experimenting with a batch of oil on the kitchen stove, Shell has prepared "The Story of Petroleum."

This 24-page booklet tells in plain language how oil originates, where it hides, how it is drilled and refined, and what its many uses are.

There are interesting illustrations. Also comic pages so readers can laugh while they learn.



The Story of Petroleum costs you no more than a 1¢ postcard. Just fill in name and address and send to:

Shell Oil Company, Incorporated, Touring Service, San Francisco 6, California.

Get your copy before the supply is gone. Find out all about what makes the world's wheels go round.

—BUD LANDIS

UTAH

"Smoky" Filmed in Utah . . .

KANAB—This city upheld its position as "Utah's Hollywood" when the 20th Century-Fox picture, "Smoky" went into production here July 12, with Anne Baxter and Fred MacMurray in the lead roles. The technicolor picture, adapted from the Will James book, was to be filmed at Duck creek on Cedar mountain and at Navajo lake, with its setting of pink cliffs and dark forests. The classic formations of Zion also were to furnish background, as were the vermilion sands of historic Cave lakes in Robinson canyon. Fay Hamblin, Kanab stockman, contracted to provide horses to be filmed as a wild band, and cattle from southern Utah ranges were to take part in an old-time roundup.

Mormons Celebrate 98th Anniversary

SALT LAKE CITY—Throughout the communities of Utah programs on July 24 commemorated the 98th anniversary of the entrance of the Mormon Pioneers into desolate Salt Lake valley. Most impressive of the memorials was the pageant "Trailways of Freedom," with cast of over 1100, which was presented as highlight of the Days of '47 celebration at University of Utah stadium here. Climaxing the two weeks memorial observance was breaking of ground for new \$250,000 "This is the Place" monument at site in mouth of Emigration canyon. Monument is expected to be completed for dedication July 24, 1946, according to John D. Giles, executive secretary-treasurer of the monument committee.

TRUE OR FALSE

Here is another set of booby traps prepared by Desert Magazine's quiz editor for this month's readers. But they really are not

booby traps—everyone of them is a legitimate question with a yes or no answer. You'll not get all of them correct, but you'll learn some new history, geography, botany, mineralogy and lore of the desert from this test. The average resident of the Southwest will get 10 correct answers. Any score of 15 or over puts you in the super class. Answers are on page 34.

- 1—A rattlesnake adds a new button to its rattle every year of its life. True..... False.....
- 2—State flower of Arizona is the Saguaro cactus. True..... False.....
- 3—The Smoki people of Prescott, Arizona, use only non-venomous reptiles in their annual ceremonial. True..... False.....
- 4—The Oatman massacre in 1851 occurred at Oatman, Arizona. True..... False.....
- 5—The soldiers who accompanied Capt. Juan Bautista de Anza on his trek from Tubac to Monterey in 1775-76 wore armor-plate of metal. True..... False.....
- 6—The sand in the White Sands National monument of New Mexico is composed mostly of gypsum. True..... False.....
- 7—Galleta is the name of a forage grass which grows wild in the desert Southwest. True..... False.....
- 8—Desert Indians in Southern California once used a crude throwing stick or boomerang to capture rabbits. True..... False.....
- 9—Navajo Indians grow cotton for weaving rugs. True..... False.....
- 10—Elephant Butte dam is located in Arizona. True..... False.....
- 11—It is necessary to have a license from the Indian Service of the federal government before opening a trading post on an Indian reservation. True..... False.....
- 12—The famous Old Dominion copper mine is located at Globe, Arizona. True..... False.....
- 13—The Bird Cage was the name of a historic boom mining camp theater at Virginia City, Nevada. True..... False.....
- 14—The desert kangaroo rat travels on all four feet. True..... False.....
- 15—The desert coyote will not harm rodents or lizards. True..... False.....
- 16—The book, *Ben Hur*, was written by Lew Wallace while governor of New Mexico. True..... False.....
- 17—Muscovite belongs to the mica group of minerals. True..... False.....
- 18—The Great White Throne is located in Bryce Canyon national park. True..... False.....
- 19—Newton Drury is director of the National Park service of USA. True..... False.....
- 20—Impurities in the water make it impossible to use salt from the Great Salt Lake in Utah commercially. True..... False.....

GEMS AND MINERALS

ARTHUR L. EATON, Editor

"PEOPLE OF THE ROCKS" ORGANIZE AT PRESCOTT

Organization of a new Arizona rock society, the Yavapai Gem and Mineral society of Prescott, was announced July 26 by Ida Smith, secretary. Officers chosen are: Alvin A. Hanson, president; H. L. Womack, vice-president; Mrs. Smith, secretary; Moulton B. Smith, treasurer; Mrs. J. Bryant Kasey, receptionist; A. De Angelis, membership chairman.

Yavapai, the secretary points out, is doubly appropriate as their club name for it is not only the name of the county but it means "people of the rocks" and was derived from Prescott's Yavapai Indians.

NEW MINERAL CLUB IS FORMED AT POMONA

Another new mineral society, the Pomona Valley mineral club, recently was organized by Geneva B. Dow, Hollis Page, Edythe M. Thompson and a number of others interested in the study of minerals and the lapidary art. Its president is Hollis Page, 1831 N. Berkeley avenue, Pomona, California, who is head chemist at La Verne water distribution center. Miss Dow, vice-president, is a former active member of Marquette Geologists association of Chicago. Mrs. Thompson, secretary-treasurer, with Wilson E. Thompson, is proprietor of Thompson's Studio, which deals in minerals, gem stones, fluorescent lamps and art novelties.

PLAINFIELD SOCIETY HAS NEW CONSTITUTION, NEW OFFICERS

New Jersey Mineralogical society, Plainfield, has adopted a new constitution and bylaws. Last year's officers have been reelected for another year as follows:

Joseph D'Agostino (National Broadcasting company), president; Dr. S. S. Cole (National Lead company), first vice-president; H. E. Millson (Calco Chemical company), second vice-president; G. R. Stilwell (Bell Telephone laboratories), secretary; Miss Edna Hensel (Plainfield Public schools), treasurer. Dr. A. B. Cummins, E. G. Conrad, E. Wise, O. B. J. Fraser are on board of directors. Following appointments have been made by the president: Dr. A. C. Hawkins, curator; W. N. Eastburn, librarian; O. Smith, R. R. Goodrich, L. Vogt, membership; H. Fielding, G. Shoemaker, R. A. Cordrey, auditing; Dr. A. B. Cummins, Dr. L. R. Burtfield, Dr. A. F. Buddington, education; P. Orem, Mrs. P. Orem, C. H. North, public relations; E. Conrad, L. Morgan, Dr. G. C. Ridland, program and field trips; L. Blackadar, P. Robinson, W. H. Savary, nominating; W. Jeffrey, T. Mooney, V. Duplin, Mrs. G. Shoemaker, Miss E. Haver, entertainment.

Following publications have been donated to library of East Bay mineral society: The Rock Book, Getting Acquainted with Minerals, Outline of Principles of Geology, Minerals of California, How to Collect Minerals, Mineral Tables, This Puzzling Planet, Caroni Gold, Locations & Notes of Vicinity of Salt Lake City, The World's Minerals, Strategic Mineral Supplies.

MONTEREY BAY AREA HAS NEW MINERAL CLUB

Monterey Bay Mineral society is a new club organized to cover the Monterey Bay area. They already have started a club library and have a traveling showcase of specimens which will make the circuit from Salinas to Monterey, Carmel, Santa Cruz, Hollister and Watsonville. Secretary is Mrs. A. W. Flippen, care of YMCA, Clay and Church streets, Salinas, California.

The national bureau of standards has established a commercial standard for all silverware manufactured or sold in the United States. It requires that the registered trademark, or name of the manufacturer or seller of silver goods shall accompany all such quality marks as silver, solid silver or sterling silver. The bureau has required the establishment of this commercial standard so that usage and practice in quality marks may become a matter of public record and acceptance all over the nation.



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Clean cabins in the cool pines
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SAPPHIRE, cabochons, brown, green, pink, purple, golden, white and blue; one each seven colors \$30.00. Total weight about 5 carats.

TIGER-EYE, cabochons, ovals 10x5 Mm size, green, red, purple, gray, blue and brown, one each six colors \$3.60.

AMAZONITE, cabochons, rounds, 6½ to 8 Mm size \$3.60 per doz.

AQUAMARINE, octagon, oval and round cut at \$1.80 to \$2.40 per carat.

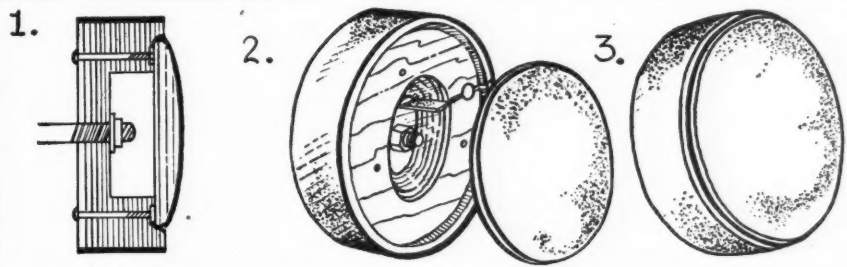
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The DUO SANDER is easily placed in position by first attaching the drum part to either end of the arbor shaft. The disc fits into the recessed open side of the drum and is substantially held in place with three bolts from the back side of the drum. The bolts screw into plate nuts attached to the inside of the disc.

DUO SANDER — 2" wide, 9" diameter, shipping wt. 3 lbs. — \$5.50 plus postage

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Extra wooden discs ready for use to fit above — \$2.00

OUR REGULAR DRUM SANDERS

7" diameter x 2" wide, shipping weight 2 lbs. — \$2.50 plus postage

8" diameter x 2" wide, shipping weight 3 lbs. — 2.75 plus postage

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9" diameter x 3" wide, shipping weight 5 lbs. — 4.00 plus postage

Arbor Hole Sizes for Drum Sanders All Styles, 1/2, 5/8, 3/4, 7/8, 1-in.

Send for our free bulletins on lapidary supplies, gem materials, books and fluorescent minerals. Upon request we will also send a copy of the booklet MINERALIGHT FINDS HIDDEN VALUES.

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GEM MART

ADVERTISING RATE
5c a Word — Minimum \$1.00

JUST RECEIVED: Shipment of Nevada Turquoise, have also purchased entire mineral stock at Brea of Ed Matteson. Some good cutting material and very rare mineral specimens. Daniels Trading Post, 401 W. Foot-hill Blvd., Fontana, Calif.

OREGON VEIN Moss Jasper, highly colored in various shades of red, yellow and green with the red predominating. Good cutting material \$1.00 per lb. Guy H. Tallmadge, 3315 Pacific Ave., Tacoma, Wash.

ATTENTION ROCK CUTTERS: Assortment of 12 cabochon blanks \$1.50. Citrine quartz \$2.00 per ounce. Blanks of Wyoming jade 50c, Hematite 25c. Sterling silver earring backs \$3.00 per doz. Cut and polished star Sapphire \$2.50 per carat (stones run from 2 to 7 carats). Faceted genuine oriental Rubies, apx. 1/4 carat \$1.50 each. Please include luxury tax on cut stones and earring backs. de Marrienne and Charles, 420 No. La Cienega Blvd., Los Angeles 36, Calif.

PREFORM CABOCHONS: Ready to sand and polish, Australian Opals, \$1.50 to \$10.00. Red and yellow Tigerite, Africa, Bloodstone, India, grey blue Agate, Moss Agate, red and brown, pink petrified wood, Texas, Brazilian Agates, Turretella and Algae, Wyoming, 75c to \$2.00. Many other preforms in stock. Luxury tax included in price, residents of California should add 2 1/2% state sales tax. A. L. Jarvis, Rt. 2, Box 350, Watsonville, Calif. 3 miles south on State Highway No. 1.

COLORFUL CUTTING MATERIAL: Death Valley onyx 50c lb., Moss Agate, Calif. 75c lb., Opalized Gem Material \$1.00 lb., Flint, Dover, England \$1.00 lb., Rhodonite (colorful) Calif. \$1.00 lb., Palm wood, Calif. Fair \$1.00 lb. Best Quality \$2.00 lb., Agates, good quality 50c lb., Gem Obsidian (Golden, Scheen, Banded or Flowered) \$1.00 lb., Howlite, the wonder material for Cameos or Carving 50c lb., California Thundereggs 75c lb., Blue Dumortierite 75c lb., Horse tail reed—rare \$1.00 lb., Brazilian Rose Quartz, best color \$4.00 lb. Smallest order accepted \$2.50. All orders plus postage. Mineral Miracles, 12103 Louise Ave., Compton, Calif. 6 Blks. East of 12100 Blk. Atlantic Blvd.

AGATES: A new find, not nodules. You have seen nothing like these, I am sure. Very high grade, bright colored Plume, Flower and Moss in shades of red, yellow, green, black, etc. Pieces will make striking, charming jewelry. Will sell slices excellent for gem cutting. Plume \$5.00 to \$25.00, Flower and Moss, \$1.50 to \$10.00 plus tax, postpaid. Send or come for your order now. Money back if not entirely satisfied. Mae Duquette, 407 No. Muscatel, San Gabriel, Calif.

LAPIDARY: 15 years experience, will cut your cabochons, \$1.50 up. Facet \$5.00 up per stone. Estimates on request. Forest N. Ransom, Box 5437, Metropolitan station, Los Angeles 55, Calif.

BEAUTIFUL SERPENTINE. Suitable for specimens, suitable for cutting, nice size, \$2.00. Peacock copper, rainbow colors, nice specimen \$3.00. Beautiful quartz crystal group, \$5.00, very nice for any collection. Colored groups, quartz crystals, tinged with Hematite, \$8.00. These groups are large, crystals are small, shine like diamonds. Jack the Rockhound, P. O. Box 86, Carbondale, Colo.

EXPERIENCED TURQUOISE cutters wanted. Rate 2 cents per carat for 40 hours work, 3 cents per carat for cutting after 40 hours in one week. Can cut up to 53 hours per week. List references and experience in first reply. Maisel's Indian Trading Post, P. O. Box 1333, Albuquerque, N. M.

SOMETHING NEW: Terminated augite xls with martite xls, all on the same specimen. Prices \$1.00 to \$4.00. With each order add 50c and receive an uncut geode or thunder egg from Utah. No order for less than \$1.00. W. T. Rogers, 1230 Parkway Ave., Salt Lake City 5, Utah.

SPECIAL MIXED LOTS: Opalite and Agate cutting material. Every piece different, five lbs. \$4.00. Please include postage. Vincent Trescartes, Box 465, Elko, Nevada.

Wanted: to buy, sell and exchange specimens outstandingly rare and beautiful. Sam Parker, 2160 East Van Buren, Phoenix, Ariz.

INDIAN RELICS, Curios, Coins, Minerals, Books, Old Buttons, Old Glass, Old West Photos, Weapons, Catalogue 5c. Lemley Antique Store, Osborne, Kansas.

AGATE JEWELRY AND OREGON AGATES—Ladies 10k gold rings, pointed or oval type, \$14.40 including excise tax. We make pendant necklaces, brooches, rings of several types. Sell plume and other agate by the slab. We guarantee satisfaction or will refund your money upon receipt of our merchandise. See that funds accompany your order. E. Lee Sigfrit, 211 Congress, Bend, Oregon.

\$2.50 brings you prepaid six rare and beautiful crystallized Arizona minerals. Vanadinite, Dioptase, Wulfenite, Willemite, Chrysocolla, Azurite. Specimens 1 1/2 x 2 or larger. Wiener Mineral Co., Box 509, Tucson, Arizona.

Choice Palm Root—Full of eyes showing root and trunk structure. Very colorful. Sliced for Cabochons. 25 cents per square inch. Satisfaction guaranteed. GASKILL, 400 North Muscatel, San Gabriel, Calif.

Minerals, Gems, Coins, Bills, Old Glass, Books, Stamps, Fossils, Buttons, Dolls, Weapons, Miniatures, Indian Silver Rings and Bracelets. Also Mexican. Catalogue 5c. Cowboy Lemley, Las Cruces, New Mexico.

Mineral Sets—24 Colorful Minerals (identified) in 1x1 compartments—Postage paid, \$3.50. Prospector's Set of 50 Minerals (identified) in 1x1 compartments in cloth reinforced sturdy cartons, Postage paid \$5.75. Elliott's Gem Shop, 26 Jergins Arcade, Long Beach 2, Calif.

Good cutting material, Petrified Wood, Agate, Jasper, \$1.00 per lb. Special mixed lots \$4.00 for 5 lbs. Variscite specimen material \$1.00 per lb. and up. Geodes and Ribbon Rock, 5 lbs. for \$2.00. Please include postage. John L. James, Tonopah, Nevada.

FOR SALE: Mineral collection, \$2500.00, the largest and most beautiful private collection in the State of Utah. Hans Anderson, St. George, Utah.

Colorado plume agate, sawed slabs, \$1 to \$30. All on approval. This is a new find, none better. Priced according to size and beauty. The Colorado Gem Co., Bayfield, Colo.

AMONG THE ROCK HUNTERS

Rockhounds have spread all over the country, even into newspaper cartoons. George Clark in "The Neighbors" depicts a disgusted young mother searching through Junior's coat pocket and remarking, "Why save silly old rocks? Can't you collect something sensible like old streetcar transfers?" Small fry's trouser pockets, too, are bulging with specimens in true rockhound style.

Mr. and Mrs. Roy Rose were hosts to members of Umpqua mineral club, Roseburg, Oregon, at July 11 potluck meeting. Mrs. Theo Bond reviewed the book *Mountains* by Mr. and Mrs. Carl Lane Fenton. Everett Teater talked on lava and modern methods of manufacturing glass. A field trip was planned to visit member Margaret Carr who is spending the summer on a fire lookout. August meeting was a picnic at Kiwanis park.

R. L. Sherman told about the recent solar eclipse as viewed from Telescope peak at July 18 meeting of Searles Lake gem and mineral society. M. R. Hughes, motion picture hobbyist, showed "Man of Conquest," life story of Sam Houston. Swimming and a picnic lunch were enjoyed before the meeting which was held at Valley Wells.

Orange Belt Mineralogical society, Redlands, has lost another of its members, Vern McMinn, whose untiring efforts helped make OBMS a success. He was past president of the club.

MEXICAN FIRE OPAL and fine specimen opal, all colors, Tiger's Eye, Brazil Carnelian, slab Chrysocolla, Ceylon Sapphire, Mexican gem amethyst, Baddeleyite pebbles, Zirconian. Money back if not satisfied. The Desert Rat's Nest, 2667 E. Colorado St., E. Pasadena 8, California.

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Add an artistic touch to your FLUORESCENT display. 1 9x12in. fluorescent art picture—tulip design—done in fluorescent minerals; strikingly beautiful under cold quartz lamp. Price \$1.00. White markings of SCHEELITE in black tourmaline crystals, very rare and quantity limited. 3 1/2 in. to 4 in. specimen, \$1.00. Postpaid and guaranteed. THOMPSON'S STUDIO, 385 West Second Street, Pomona, California.

Montana Moss Agates in the rough for gem cutting, \$1.00 per lb. plus postage. Elliott's Gem Shop, 26 Jergins Arcade, Long Beach 2, Calif.

Colorado Desert Minerals: Anthophyllite, a beautiful woodlike amphibole mineral, fair size chunk \$1.00. Vanadinite-cherry-red, 50c up. Perlite, 50c. Fluorescent—red—calcite 50c. 6x3x2 in. banded fluorite with ribbon of red fluorescing calcite in center, \$3.00. Chalcedony roses, 25c. Apache tears, 25c. Assortment of geodes, some have the appearance of pine cones, very odd. Prices according to size. For cutters: Palmwood, jaspers, agate, copper mineral complex, has hardness of 5, 35c per sq. in. Postpaid in U. S. Correspondence invited. Desert Blossom Rocks, Box 356, Wintherhaven, Calif.

B. Bane, jeweler of Kingfisher, Oklahoma, has just purchased some lapidary equipment. Since he is a beginner, he would like to visit the lapidary shop of someone in his vicinity. Does Desert Magazine have any lapidary-readers near Kingfisher?

Edward W. Foerster, who previously has supplied Gem and Mineral sets as well as Gem Craft and Jewelry Craft, complete outfits for cutting and polishing and jewelry making, recently announced his new business association with Krueger Stone House, an old established Los Angeles gem house, as director of mail order business. Kruegers supplies any type of gem stone to the amateur, professional and collector.

Ureco LAPIDARY SUPPLIES



War priorities on many materials still prevent us from manufacturing lapidary equipment, but we do have available a good stock of the following supplies for the lapidary shop:

VRECO DIAMOND SAWS . . . give you better performance . . . longer life . . . faster cutting.

6-inch.....	\$4.50	12-inch.....	\$ 8.75
8-inch.....	5.50	14-inch.....	11.00
10-inch.....	6.80	16-inch.....	13.75

Be sure to specify arbor hole size required. Postpaid.

VRECO GRINDING WHEELS are made expressly for us by the NORTON CO.

	80, 100, 120 & 180 grit	220 grit
4 x 1/2-inch.....	\$ 1.05	\$ 1.10
6 x 1 -inch.....	2.40	2.60
8 x 1 -inch.....	3.60	3.90
10 x 1 -inch.....	5.00	5.30
10 x 1 1/2-inch.....	7.00	7.50
12 x 1 -inch.....	6.90	7.50
12 x 1 1/2-inch.....	9.60	10.40
12 x 2 -inch.....	12.30	13.30

Be sure to specify arbor hole size. Postage extra.

VRECO DRESSING BRICKS are an indispensable aid to keeping wheels true.
8"x2"x1" Dressing Brick..... \$.85

ABRASIVE GRAIN . . . Silicon-carbide grains in grit sizes 60, 80, 100, 120, 150, 180, 220, also F (240), FF (300), and FFF (400).

50c per lb. in single lb. lots
35c per lb. in 2 to 5 lb. lots
30c per lb. in 6 to 99 lb. lots
23c per lb. in 100 lb. lots or more

(Postage extra)

POLISH POWDER . . . Tripoli Polishing Powder, 2 lbs. \$.85

FELT POLISH WHEELS—Spanish White Felt . . . made expressly for us by Byfield Felting Co. These wheels are the proper hardness for polishing gem stones and flat specimens.

6 x 1-in.....	\$4.25	10 x 1 -in.....	\$11.00
8 x 1-in.....	7.25	10 x 1 1/2-in.....	14.90
10 x 2-in.....	\$19.00		

Arbor hole sizes: 1/2", 5/8", 3/4", 7/8", 1".
Felt prices are postpaid.

SANDING CLOTH . . . CARBORUNDUM BRAND Silicon-carbide cloth for disc or drum type sanders. Grit sizes, 120, 220, 320.

Width	Price per Ft.	No. Ft. per \$	Price per 150 ft. Roll	Roll Ship. Weight
2"	5c	24 ft.	\$ 4.70	3 lbs.
3"	7c	15 ft.	6.90	5 lbs.
8"	17c	7 ft.	18.00	12 lbs.
10"	22c	6 ft.	22.00	15 lbs.
12"	25c	5 ft.	26.50	20 lbs.

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Cogitations . . .

Of a Rockhound

By LOUISE EATON

Nobody's time is so valuable that he can't be courteous. A pleez, thank yu or a pardun me is just as effective as a shove or a glare—an' certainly creates a pleasanter atmosphere. Discourteous rockhouns is scarce. They's always ready to lend a hand if needed an' shure is grateful for courtesies received. Maybe this attitude is engendered by th' vastness an' quiet uv th' desert. Rockhouns is always ready to share grub an' watter with th' uther fella. They'll even share good rock-huntin grounds. Most always.

When yu see sumwun with rockhoun jewelry on, it is almost impossible not to begin talkin to um—jus to find out if they bought th' trinket or if they made it umselfs an' so belongs to th' rok fraternity.

"Early" is th' time yu has to get up to go to wurk. At th' same hour on a rok trippin mornin th' day is more'n half gone. Queer, isn't it, how a fella can always find time to do th' things he truly wants to do.

Rockhouns would make good chamber uv commerce boosters if they wuz as 'nthusiastic about their community as they are about their hobby. They can sell th' rok idea to most ennywun becuz their hearts is in it. That's what it takes to make a successful home town booster. Uv course, it is pritty difficult for a rockhoun to understand how ennyboddy can fail to become a rockhoun.

Cmmdr. J. L. Reinarts, USN, displayed and operated his portable equipment including a 12 inch diamond saw, a disc cutter and faceting machine, for the San Jose lapidary society at its July meeting in Santa Clara. Cmmdr. Reinarts called his apparatus a "kitchen" type outfit because "it could be operated on the kitchen table without fuss or muss." President R. S. Grube reported on the East Bay mineral society annual display, for which he was a judge. W. O. Eddy of Salinas, a visitor, gave his impressions of Los Angeles Lapidary society annual exhibit.

Panhandle-Plains Historical Society museum, of Amarillo, Texas, contains five cases of rocks, minerals and meteorites to be found in Texas Panhandle. The workroom has a collection of about 2500 rocks and minerals in process of being classified.

Since its organization in 1937, Gem Collectors club of Seattle has grown from 22 members to about 150. Collection of minerals and lapidary work are chief interests.

At July 5 meeting of Santa Monica Gemological society President Vern Cadieux was presented a certificate of honorary life membership for his outstanding interest in the society. Also on the program was a technicolor picture on Death Valley and desert flowers, with a talk on the geology of Death Valley by Professor W. R. B. Osterholt.

"A Concise Introduction to Gemology" was subject of a talk by Gene Linville before Mineralogical Society of Southern California at July meeting in Pasadena Public Library.

AMAZING BARGAINS! . . . HIGH QUALITY STONES

Almandine Garnets (Madagascar) ea.....	\$1.20
Green Garnets (Australia) ea.....	1.80
Opals (Australia) ea.....	.95
Moonstones (Ceylon) ea.....	1.20
Sapphires (Blue & Golden, India) ea.....	2.40
Aquamarines (Brazil) ea.....	1.80
Sardonyx (South America) ea.....	.90
Quartz Topaz (Brazil) ea.....	1.80
Amethysts (Brazil) ea.....	1.20
Turquoises (Persia) ea.....	.90
Rough Quartz Topaz (Brazil) ea.....	1.80

All stones cut and polished. We guarantee complete satisfaction. See that remittance accompanies your order.

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MINIATURE SETS, Asst'd per doz.	\$6.00
50 RING STONES, including genuine and synthetic	\$7.50
SYNTHETIC RUBIES or GENUINE GARNETS, per carat	\$1.25
CAMEOS or OPALS—Genuine—12 for \$3.75	
100 Jewelry Stones removed from rings, etc., \$2.40; 50 large ones	\$2.40
12 ARTICLES ANTIQUE JEWELRY, rings, pins, etc.	\$3.00
500 COSTUME JEWELRY STONES	\$2.00

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Learn Gem Cutting Hobby--

THOUSANDS throughout the country are turning to gem cutting as a fascinating and profitable hobby. You too can learn to cut gems, and operate your home lapidary shop. Spend your vacations collecting rough gem materials in the many localities that abound throughout the country, and your leisure time turning this material into beautiful gems, polished specimens, and many valuable ornaments.

THE ART OF GEM CUTTING, new third edition, price \$1.50, with 128 pages, and 68 illustrations, will enable you to learn gem cutting. Both cabochon and facet cutting are described, and various types of gem cutting equipment illustrated and described. Includes an excellent chapter pertaining to gemology. ART OF GEM CUTTING, by Dr. H. C. Dake, and Richard M. Pearl, price \$1.50, Postpaid.

MINERALOGIST PUBLISHING CO.

329 S. E. 32 Ave. Portland 15, Oregon

Plans were being completed in July for the annual mineral show of Long Beach Mineralogical society, to be held at the main public library August 27 to September 14. Mr. and Mrs. Bond are in charge of arranging the display.

If any rockhound can spare old copies of Desert Magazine, they will be gratefully received by Santa Monica Gemological society for their library. At present they have all of 1941 issues except February and March, and all of 1942 except November and December. They will gladly pay shipping charges. Address Mrs. Myrtle Cadieux, Librarian, 9908 Santa Monica Blvd., Beverly Hills, California.



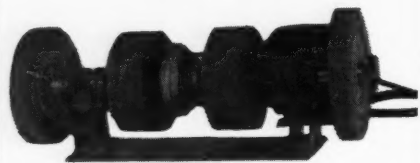
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**Rings, \$4.00 and Up Necklaces, \$5.00 and Up
Brooches, \$5.00 and Up
Bracelet and Ring Sets, \$15 and Up**

Plus 20% Excise Tax and 2 1/2% Sales Tax

**Petrified Picture Wood and Moss Agate—Jewelry
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Entrance Subway at Ocean and Pine
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At the July meeting of Texas Mineral society Carl Flaxman and Raymond Hadon gave an interesting talk on style trends in jewelry. Many pieces of jewelry were shown to illustrate the various trends. Mr. B. Salas, club member, displayed a large number of gem stones he had cut and polished.

New officers of Santa Monica Gemological society are: Vern Cadieux, president; W. G. Russell, first vice-president; Harold Little, second vice-president; George Hartman, treasurer; Mrs. Estelle Tesh, recording secretary; Mrs. Elsie Jacobs, corresponding secretary.

After a summer recess during July and August, Marquette Geologists association, Chicago, scheduled first meeting of fall season for September 8, when Dr. Ball will continue his "easy lessons" and Mr. Sumi will discuss meteorological instruments. Both talks will be illustrated with slides.

Members of Los Angeles Mineralogical society were reminded to keep August 19 an open date for their field trip to the Lehmans. President Richard Lehman is all set to barbecue steaks—on shares!

Texas Mineral society, Dallas, at its regular June meeting elected the following officers: Raymond C. McIver, president; J. D. Churchill, vice-president; A. O. Phipps, secretary-treasurer; Mrs. William H. LaDew and Mrs. J. D. Churchill, directors.

At July 11 meeting of Long Beach Mineralogical society, Mr. Schmidt presented a motion picture showing building of Parker dam and the Metropolitan aqueduct. Mrs. Ohlson spoke on rubies.

Harold E. Eales gave a helpful talk, "How to Learn Minerals by Collecting," before Pacific Mineral society, Los Angeles, at the July 17 meeting, Asbury Apartment hotel.

Wood-Opal of Virgin Valley, Nevada, was subject of talk by Daniel E. Steriss at July 8 meeting of San Diego Mineralogical society. Steriss operates El Dandora Rock Shop of San Diego.

Mailing over 200 copies of the Bulletin and Rock Pile monthly is going to be simplified for the secretary of East Bay mineral society. As a result of the money-raising dinner March 10, society now has a new addressograph machine.

Allen H. Nicol, charter member of Sacramento mineral society, is again a civilian after having served in the Marine Corps and is engaged in technical mineralogical work in Washington D. C. Nicol was first president of San Diego mineral society when it was organized in March 1934, as the outgrowth of a successful mineralogical class conducted by him while he was curator of mineralogy at San Diego museum of natural history. He is a former mineral technician for state division of highways.

Gem Collectors club of Seattle, Washington, recently was honored by Seattle Sunday Times in its rotogravure section by being allotted two pages of pictures showing members cutting and polishing stones. Among those shown were Mr. and Mrs. L. L. Roberson, Mr. and Mrs. Gustafson, Mrs. C. A. Ross, and Mr. and Mrs. Walter Larson, in their work rooms.

Members of Kern County Mineral society, their families and friends, were all set to take part in the big Treasure Hunt and chicken potluck dinner scheduled for August 12 at home of Mr. and Mrs. Van Leuven, Bakersfield.

Feature of July 5 meeting of Gila Mineral society, Miami, Arizona, was a talk on cutting and polishing of gems by Harold Monteith, who operates a cutting and polishing shop in Claypool. Members brought specimens for classification and discussion. Meetings are held in YMCA.

Orange Belt mineralogical society held July meeting in Fairmount park, Riverside, California. Members displayed polished specimens. August 12 meeting was planned to take place in Lytel Creek park, San Bernardino.

D. F. Courtright of Western Fiberglass company, San Francisco, told Sacramento mineral society at their June meeting about the modern miracles of glass. His display included glass wool, glass thread of silky sheen, brocaded glass cloth in delicate pastel colors, and a piece of glass that neither expands nor contracts, a type which is manufactured secretly and exclusively for military use.

ANSWERS TO TRUE OR FALSE

Questions on page 30.

- 1—False. A rattlesnake adds a button only when he sheds his skin.
- 2—True. 3—True.
- 4—False. The Oatman massacre occurred nine miles from the present town of Sentinel in southern Arizona.
- 5—False. Only buckskin armor was worn by Anza's men.
- 6—True. 7—True. 8—True.
- 9—False. Navajo Indians weave their blankets of wool.
- 10—False. Elephant Butte dam is in New Mexico.
- 11—True. 12—True.
- 13—False. The Bird Cage theater is located at Tombstone, Arizona.
- 14—False. The kangaroo rat travels only on his hind legs, with a little help from his tail.
- 15—False. Coyotes eat rodents and lizards.
- 16—True. 17—True.
- 18—False. The Great White Throne is located in Zion National park.
- 19—True.
- 20—False. About 80,000 tons of salt for commercial use are harvested from the Great Salt Lake annually.

AMATEUR GEM CUTTER

and polishing equipment. Leland Quick, who conducts this department, is former president of Los Angeles Lapidary society. He will be glad to answer questions in connection with your lapidary work. Queries should be addressed to Desert Magazine, El Centro, Calif.

By LELANDE QUICK

The magazines are carrying many more advertisements for gem cutting accessories and materials than they did a year ago. Things seem to be loosening everywhere. One mineral magazine has 18 more pages than it had a year ago and another has 12, while the advertising of interest to gem cutters in *Desert Magazine* is just about double what it was then. Evidently many people have decided to go into the gem business for there are many new names.

If you have been planning a lapidary shop as a postwar venture we believe you can go ahead now—IF you can get motors. Getting a motor is still the big hurdle to jump. But there is everything offered for sale, with the exception of new diamond saws. And what things! The dealers must have gone on rock trips too, or done business with people who have, because there is a plenitude of worthwhile materials offered. If you are a mechanic you can build a shop of your own. If you are not mechanically minded you can assemble a rather complete shop from the advertisers in almost one issue of the *Mineralogist* or *Rocks and Minerals* or our own columns. If you are just toying with the idea and have no information, you might buy a book or two, procurable from our book department. Two books you should have are *The Art of Gem Cutting* by Dake and Pearl and *Jewelry, Gem Cutting and Metalcraft* by Baxter. Read the books, get some rocks, assemble a shop and go to it. But there's one important thing to remember—try to make the acquaintance of someone who cuts gems, for you can learn more in one hour in another man's shop than you can by reading ten books. If you know no one who cuts gems get in touch with your nearest mineralogical society for there always is someone in every such society who cuts. If you have no society in your community and you can uncover a dozen interested people then organize one. At least 20 new societies have been announced in the past three months and I notice it is the tendency now to call them gem and mineralogical societies rather than just mineral societies.

Time has brought a great change. A few years ago everyone had to learn gem cutting the hard way—by trial and error. There were no books about gem cutting; there was no commercial machinery for sale; there were no organized groups; there were no magazine articles or speakers on gem subjects. Now there is a mass of information with good magazines and books about lapidary procedure and the community is small indeed that doesn't have at least one gem cutter. There are large and flourishing societies organized for the express purpose of the exchange of lapidary ideas. Mineral collectors (not always mineralogists, remember) used to refer almost contemptuously to the gem cutters in any group as pebble polishers and crystal crackers. They were the folks who usually said, "You can't improve on nature"—as if nature never made a mistake. I believe the feeling is better now and the gem cutter is welcome in any mineralogical group.

In my first column I said that I believed that any mineralogist was a better mineralogist if he was also a lapidary. Time has proved I was right for nearly every one of the many mineralogical societies in the Los Angeles area had special "field trips" to the recent great exhibition of the lapidary art sponsored by the Los Angeles Lapidary society. Yes, time has brought a great change—time and understanding.

This section of *Desert Magazine* is now in its fourth year and there have been times when I have been discouraged but just as my doubts

were greatest, a letter from someone usually came along which lifted me again. Those of you who have been steady readers will remember references to L. E. Perry of Pasadena, California. Mr. Perry became an amateur gem cutter in the Imperial Valley, California, the home of *Desert Magazine*. When an acute bottleneck developed in the war effort because there was no skilled labor to process jewel bearings for airplane engines and quartz crystals for other service supplies I mentioned the fact in this column. Perry then transferred his amateur skill to the war effort and placed several others that I referred to him, some of whom came from distant states. Perry now advises that he was chosen from among several hundred to represent the war effort gem and lens grinders in receiving the Army-Navy E award. He writes, "I believe that many thanks are due you personally for much good work along this line. Through you I have placed several rockhounds on precision jobs when and where they were needed. It seems amazing to me how these columns have helped in the war."

Thank you. Mr. Perry, and thanks to all gem cutters everywhere who transferred their recreational effort to a most grueling type of precision work for the sake of the country. It's fun to work up an agate into a finished gem but when you have to grind all day every day and never waste a minute or spoil material it is the most nerve wracking job in the world. I am glad indeed that the government has given the task official recognition with the E award.

Lizzie Stephenson of Delano, California, asks if I can suggest someone who will drill holes in some pieces of jade for cigarette holders. I know of no one who does that and I would appreciate some information from someone who can do it. I have never seen any gem cigarette holders made by amateurs—and there is an excellent idea for gem cutters to work on. Such holders not only would be a worthy addition to the practical arts but they would offer a challenge to the imagination and artistic skill of many lapidaries. It would seem to me that the reverse procedure would be the best in this case. That is, the hole should be drilled first, perhaps in an oblong block of material and the grinding should proceed from there. Can someone offer help on this problem?

The American Museum of Natural History in New York recently acquired a 19 carat oval brilliant cut Brazilianite. This is the latest gem crystal to be discovered and is known in only one location in Brazil. It is transparent to translucent and is a chartreuse yellow. Only one other stone has been cut from the material so far as is known and that is a 23-carat emerald cut. This gem promises to be rarer than Benitoite.

DID YOU KNOW . . .

- A diamond the size of a hen's egg (770 carats) was found last January in Sierra Leone, West Africa. It is the largest uncut diamond in existence and is larger than the Vargas or Jonkers diamonds before they were cut.
- The largest diamond ever found in East Africa was recently found in Shinyanga, Tanganyika. It weighs about 120 carats in the rough and is valued at \$60,000.
- Russia recently announced the discovery of 19 new diamond deposits in the Ural mountains.

This page of *Desert Magazine* is for those who have, or aspire to have, their own gem cutting

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Diamond Wheels



Enlarged section of rim shows special, relieved blade side and diamond tooth construction which provides unusually fast, free cutting.

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Due to Rimlock's remarkable cutting ability, almost all production has been going into military use. Now limited quantities have been released and are available for rock cutting. Write for literature, specifications and quotations.

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NEW MODELS
GREATER EFFICIENCY
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FREE 4-Color Catalog



MORMON FENCE

Made of cedar poles cut on the ground, requires much labor and material, but will last indefinitely and turn the wildest stock. Photo by Wallace Bransford.

DESERT FENCES

By CHARLES KELLY



SLAB FENCE

"Horse high, bull stout and hog tight," this fence of ripple-marked sandstone slabs is ornamental as well as permanent and useful.



PIONEER FENCE

A windrow of cedar trees grubbed from the hills, has served a half century, and with a little repair will last another 50 years.



IRISH FENCE

The material was gathered from the field it encloses. Involves no cost except muscle and sweat, the main tool being a stout back.



By RANDALL HENDERSON

HOT? YES, the temperature in the Imperial valley of California where *Desert* is published is 112 degrees today, July 30. That is shade temperature.

And yet more than a million people are living today on the Great American Desert—in the five states of Utah, Arizona, New Mexico, Nevada and California.

Why do they choose this region of extreme summer temperatures for their homes?

For many reasons! Some are here for their health. Microbes do not thrive in hot dry climates. Others because the blood of the pioneer still flows strong in their veins. They love the independence of the frontier. The primitive living conditions which still prevail in many parts of the desert are a challenge to them. They do their best work when the going is tough. They are fortunate people, for they have learned that all-important fact of life—that true happiness comes from within, from the satisfaction of creative work and achievement.

The health-seekers and the pioneers are a minority. The majority are here for profit. They are farmers in the irrigated valleys, cattlemen on the ranges, mine operators and merchants and bankers and doctors and salesmen—middle class Americans who find less of vicious cutthroat competition, less chiseling, less of distrust, and a quicker recognition of integrity and character than in the big crowded centers of population. Racketeers do not thrive for long in a country community.

The tradition of open-handed hospitality, of neighborliness, of tolerance, which characterized the old West, survives in the desert country, especially in the more remote regions where men and women live close to the earth and rely on Nature and their own hands and ingenuity for the gadgets of daily living.

A very important part of the income of desert people comes from agriculture—and the agricultural economy rests on fertility, water and high temperatures.

And so, it all adds up to this: Most of us make our homes on the desert because we prefer it. We live here, not in spite of high temperatures, but because of them. Air-conditioning has taken the sting out of the summer heat in most of our homes and shops. And when winter comes we have the grandest climate on earth.

* * *

In a current issue of the *Gazette of Gallup, New Mexico*, I read this announcement: "Manufacture of Indian style jewelry on a factory basis will be inaugurated in Gallup August 1, marking the first machine invasion of this territory, heretofore jealously guarded and widely recognized for its handmade products."

I know that paragraph will bring a feeling of regret to many readers of *Desert*—as it has to me. You and I wish that it wasn't true. The craftsmanship of the Navajo silversmith is crude sometimes, but it is true art. It is an expression of that deeply-rooted urge in the human heart to create something beautiful—whether it be poetry or pottery or sculpture or jewelry.

And yet there is another side to the story. Navajo silversmiths

have never been well paid for their work. A wage equal to that of skilled craftsmen in the white man's world would make the cost of Navajo silverwork almost prohibitive to people of limited means. And therein lies the dilemma. Shall we perpetuate art at starvation wages, or sacrifice art in the interest of giving the Indian a decent income and the self-respect that goes with good earning power.

Fortunately, these are not the only alternatives. I believe the Indian Service should continue its efforts to encourage handicraft work among the Indians—and the marketing of these products among buyers who can afford to pay a price which skilled work deserves.

On the other hand, I can see no good reason why the family of moderate income should be deprived of those exquisite Indian designs in silver and turquoise because they cannot afford the luxury of handmade ornaments.

If we are going to perpetuate Indian craftsmanship, one thing is certain. We are going to have to pay higher prices for the bracelets and rugs and vases and hand-woven baskets. There is no point in shedding tears of sentiment over the passing of Indian craftsmanship. If we think highly enough of the Indian arts to pay the artist an ample wage for his labor, he will continue to do creative work. If we are not willing to do that, and the Indian goes into a more remunerative field of work, it will be our failure, not his.

* * *

Recently I spent an evening at the cabin of W. E. Ketcham—park service employe whose home is on the greasewood mesa near Twentynine Palms. He calls his place Rancho Dipodomys, after the four-toed little denizen of the desert commonly known as the kangaroo rat.

At sundown each day "Ketch" scatters grain on his porch and the little animals with the long tufted tails come in from their surrounding villages for their daily feast. They put on a show as good as a three-ring circus. They travel on their hind legs like a kangaroo—and their agility is amazing. Ketch raises nothing on his ranch except dipo—he is their protector as well as their meal ticket.

From the standpoint of some persons, it is unfortunate the term rat has been applied to them. They are friendly little pets that have nothing in common with the rodent which has become a scourge in other parts of the world. In fact, the word rat as applied to certain denizens of the desert—including members of the human family—has an entirely different connotation to desert dwellers than to folks who dwell in other places, the waterfront for instance. "Rat" is a fighting word under some circumstances—but out here in this arid country you may flatter a man by calling him a desert rat.

Folks not accustomed to the desert usage of the word may find it difficult to readjust their definitions. There are some—non-residents of the desert—who would outlaw the term desert rat. But the old-timers on the desert do not feel that way about it. They coined the term themselves—and they'll probably make it stick.

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Mines and Mining . .

Winnemucca, Nevada . . .

Holder of the first hoisting engineer's license ever issued in Nevada to a woman is Mrs. Maude Morris, employed at Nevada Sheelite mine near Rawhide. She also was the smartest candidate ever to appear for the test, in the opinion of Matt Murphy, state mine inspector. "She knew all the answers and passed the highest of anyone who has come before the board since I have been a member," he said. Before coming to Nevada she once operated a locomotive in Montana.

Bishop, California . . .

Saddle Rock gold mine at Skidoo has been purchased by Wm. C. (One Match Bill) Thompson of San Fernando from Helene West, former owner of Stove Pipe Wells Hotel and called "The Princess" by her friend Death Valley Scotty. This is the second mining property purchased by Thompson in recent months. In April he acquired the Shorty Harris gold and scheelite tungsten property in Gold Belt mining district, considered one of the richest tungsten deposits in the US. Also in recent months he has discovered copper and tungsten deposits in Shelf and adjoining Death Valley mountains.

Salt Lake City, Utah . . .

Postwar demand for copper will be ample to insure continued employment of the 4100 men now working at Utah Copper company's mine and mill for several years after V-J Day, E. T. Stannard of New York, president of Kennecott Copper corporation, predicted in July while visiting Utah and Nevada properties controlled by Kennecott. Copper production in their mines so far this year have been running at about 72 per cent of that maintained early in 1944.

Kelso, California . . .

Expanding its iron ore property holdings in the desert, Kaiser Company, Inc., iron and steel division, purchased several mines in Kelso district from Colorado Fuel and Iron Warehouse company, Denver, according to deeds on file July 12. Revenue stamps indicated purchase price of \$125,000. Properties are known as the Iron King Quartz, the Iron Mountain Nos. 2, 3, 4, 5, 6 and the Iron Mountain placer mine. Ore is transported by giant trucks to Union Pacific siding at Kelso, then shipped by rail to the Fontana steel mill.

Washington, D. C. . . .

Senator Abe Murdock, Utah, reported July 18 that President Truman had approved plan submitted for monetizing at \$1.29 per ounce 300,000,000 ounces of free silver now in treasury vaults. Program calls for issuance of \$387,000,000 in silver certificates. Inasmuch as this issue does not require an equivalent amount of federal reserve notes or other interest bearing paper, earning to the government in annual interest alone, Sen. Murdock pointed out, will amount to \$7,740,000 not to mention the profit accruing to the treasury to the amount of \$247,000,000. "This action in my opinion will be hailed by the entire population of this country. It may be criticized by a few big bankers who have always opposed silver as money," the senator declared. "It can't possibly be criticized as inflationary because the silver certificates issued will be issued in lieu of the same amount of credit dollars and a silver certificate dollar is less inflationary than a credit dollar because it bears no interest."

Golconda, Nevada . . .

A gold strike in Adelaide district south of here was reported July 25 by G. C. "Red" Staggs, original discoverer of the famed Jumbo gold mine. This is said to be the first gold strike made since the ban was lifted July 1. Assays from the Hoodoo claims run 6.26 ounces gold to a ton, with a small amount of silver. It is expected to run \$219.53 per ton.

Imperial County Farmers Have One of the Most Impressive War Records in the United States if Not in the Entire World!

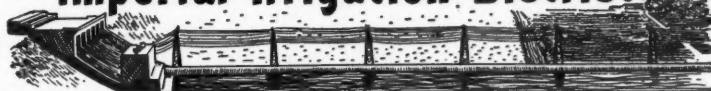
● THE 13 "MILLION DOLLAR" CROPS WERE:

- In addition to contributing large numbers of their sons and daughters to the armed forces of the nation, Crops and Livestock produced by them in 1944 had a valuation of \$61,706,241.
- Data assembled by the Imperial County Board of Trade shows that 13 of these products had a valuation of \$1,000,000 or more each; seven had an individual valuation of more than one-half million dollars, and 44 items had respective valuations ranging from \$2,000 to \$480,000.

1. Lettuce, 13,433 cars shipped	\$12,895,690
2. Cantaloupes, 5,708 carloads	7,762,880
3. Cattle, 77,200 head	5,790,000
4. Alfalfa, 18,307 cars	5,217,495
5. Carrots (fresh), 6,973 cars	5,125,155
6. Flax, 800 cars	4,579,200
7. Barley, 927 cars	1,668,600
8. Peas, 643 cars	1,464,754
9. Tomatoes, 1,036 cars	1,258,740
10. Sugar Beets, 2,705 cars	1,190,200
11. Dairy Cattle, 12,776 head	1,149,840
12. Watermelons, 2,467 cars	1,036,140
13. Sheep, 113,700 head	1,023,300

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Imperial Irrigation District



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The most popular all-time gift. The perfect remembrance for any occasion—birthday, anniversary, or homecoming. Extra fancy light golden Deglet Noor dates, the famous Valerie Jean date cake, date roll, jumbo stuffed dates and the date honey fruit confection with a generous supply of California walnuts. All these are packed in a delectable carton—and it is just as delicious as it looks.

In our 16 years of shipping, this package has proven by far the most popular, and letters from the Boys and Girls overseas raving about this gift are heart-warming. Packed to carry 'round the world.

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